

Econometrics Replication

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1. Introduction

1.1. Mechanism of the Effect and Literature Review

Previous literature has consistently shown that adult education programs play a key role in reducing poverty rates in various regions (Oxenham 2002; Ortega & Rodríguez 2008), but previous designs suffer from irrelevance to daily work and high dropout rates. Therefore, it is necessary to think of a way to directly help adults gain the benefits of education. This paper proposes an innovative strategy to empower adults by teaching them to use mobile phones to acquire essential skills. Compared to other educational programs, teaching people how to use cell phones effectively has several advantages.

First of all, cell phone use can help improve learning ability in various fields, although this effect is short-lived (Barrow *et al.* 2009). Second, cell phones is a good access to multiple knowledge online, so people who have access to cell phones can self-study which is far better for students to improve their long-term study score (See-To *et al.* 2012). Moreover, Cell phone use is a good way to get information about employment opportunities and they are more likely to find a job (Grzybowski & Patel 2023), and therefore, people will find the program of great use in daily life. Moreover, for farmers, mobile phones are a good access to get accurate and timely agricultural information to avoid the reduction of grain price dispersion, which has been demonstrated by (Aker 2010). Other influential effect are also discussed by (Gonzalez & Maffioli 2024; Aker & Mbiti 2010; Cheng 2015).

1.2. Experimental design

This paper uses randomized controlled trials (RCTs), which are widely used in economic design and are a common practice to avoid bias or intentional manipulation of results. By selecting 113 eligible villages in Niger, Dosso, and Zinder and randomly assigning cohorts of 58 villages with ABC, this study begins a five-period panel data. The ABC villages follow the same curriculum as the non-ABC villages, but the ABC policy is introduced three months later to help the students learn.

Only membership in a formal or informal producer association at the village level, illiteracy as confirmed by an on-site diagnostic test, and willingness to participate in the program were required to implement the cohort. If there were more than 50 eligible applicants in a village, students were randomly selected from all eligible applicants through a public lottery. To measure student progress, writing and math tests were administered in baseline surveys before the program began, and follow-up surveys were administered twice during the program (June 2009 and June 2010) and seven months after classes ended (January 2010 and January 2011).

2. Main Result

2.1. Baseline Specification

Before we introduce the main result, we first need to check whether the difference-in-difference assumption is valid.

$$Test_{itv} = \beta_0 + \beta_1 ABC_{itv} + \mathbf{X}_{itv}' + \tau_{vt} + \varepsilon_{itv}, \quad (2.1)$$

where $Test_{itv}$ is the test score of individual i in village v at time t , ABC_{itv} is a dummy variable indicating whether the individual has a mobile phone, \mathbf{X}_{itv}' is a vector of individual characteristics, τ_{vt} is subdistrict fixed effect and ε_{itv} is the error term. The result is reported in Table 1 and the standard error is clustered at each village level.

The result shows that the test score is not significantly higher in the treatment group than in the control group, which indicates that the RCT assumption is valid. This is because if the random experiment is not valid, the coefficient of β_1 will be statistically significant, which means that selecting which group to be the treatment group in our experiment is not random.

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[‡] Note that all the relevant codes and details of replication this PDF file is available at github. This repository will be modified to delete the instructions and only contain the latex code and stata, python code with the data. Link: <https://github.com/sergiozxy/Replication-Econometrics>.

TABLE 1. Difference in Test Scores between the Treatment and Control Groups

	(1) literacy	(2) literacy	(3) math	(4) math
abc	-0.0231 (0.0400)	-0.0291 (0.0420)	-0.0593 (0.0469)	-0.0671 (0.0495)
female		-0.133*** (0.0348)		-0.218*** (0.0375)
age		-0.00236** (0.00104)		-0.00153 (0.00104)
dosso		0.359*** (0.0843)		0.197** (0.0762)
<i>N</i>	5982	5675	5982	5675
R-squared	0.0224	0.0278	0.0199	0.0339

Standard errors in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Note: we also include subdistrict fixed effect in each regression model.

TABLE 2. Household and teacher characteristics in the treatment and control regions

Variable	Mean without abc	SD without abc	Mean with abc	SD with abc	Diff	std
Panel A: pre-program household characteristics						
age	37.86	13.10	37.18	11.76	-0.36	(0.93)
Are you the household head?	0.560	0.497	0.547	0.498	-0.01	(0.02)
Respondent is Hausa	0.715	0.452	0.721	0.449	0.01	(0.03)
Number of household members	8.422	4.054	8.328	4.074	0.02	(0.25)
Percentage of children under 15 who have some education	0.279	0.276	0.269	0.270	-0.00	(0.02)
Number of asset categories owned by household	4.990	1.609	4.979	1.575	-0.03	(0.10)
Household experienced drought in past year	0.385	0.487	0.380	0.486	-0.03	(0.03)
Household owns a cell phone (excluding group phone)	0.296	0.457	0.295	0.457	-0.00	(0.03)
Access to household or village-level cell phone	0.763	0.426	0.798	0.402	0.04*	(0.02)
Respondent has used cell phone since last harvest	0.542	0.499	0.573	0.495	0.04	(0.03)
Respondent has made call	0.691	0.463	0.725	0.447	0.03	(0.04)
Respondent has received call	0.858	0.349	0.868	0.339	0.03	(0.03)
Panel B: pre-program Teacher characteristics						
Level of Instruction of Teacher	8.323	2.084	8.572	1.779	0.08	(0.22)
Age of Teacher	33.06	9.158	32.71	8.067	-0.31	(1.18)
Female Teacher	0.317	0.467	0.368	0.484	0.06	(0.04)
Teacher from Same Village	0.757	0.430	0.682	0.467	-0.02	(0.05)
Panel C: pre-program Test-Score characteristics						
Baseline literacy test Z-score	-1.03e-08	1.000	-0.0269	0.886	-0.02	(0.04)
Baseline numeracy test Z-score	-6.69e-09	1.000	-0.0712	0.816	-0.06	(0.05)

Notes: * significant at the 10 percent level; ** significant at the 5 percent level; *** significant at the 1 percent level.

2.2. Contamination Check

Apart from testing the direct effect of ABC_v on the test score, we also need to check whether there is any contamination between the treatment and control groups. The contamination check is to test whether the treatment group and the control group are significantly different in terms of household and teacher characteristics. To check whether it is significantly zero, we also use the Equation (2.1) to check if the policy ABC_v contains the problem.[†] The result is shown at Table 2.

The summary statistics is reported in Table 2. We can see that before the program starts, all of the variables are not significantly different between the control group and the treatment group, indicates that there is no pre-treatment contamination. In addition,

[†] Note that using two-tailed t-test is equivalent for using regression in dummy variable setting and we also correct for individual fixed effect and cluster the standard error at village level, which means that our result is more robust.

TABLE 3. Difference-in-Difference Estimation of ABC policy

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	literacy	math	literacy	math	literacy	math	literacy	math
abc	-0.0511 (0.0465)	-0.0952* (0.0548)	-0.0551 (0.0503)	-0.106* (0.0594)	-0.0556 (0.0503)	-0.106* (0.0593)	0.200*** (0.0409)	0.230*** (0.0424)
post	-0.00397 (0.0587)	-0.00444 (0.0658)	-0.00525 (0.0599)	-0.0103 (0.0680)	-0.00414 (0.0599)	-0.00931 (0.0681)	-0.0121 (0.0602)	-0.0270 (0.0692)
abcpost	0.199** (0.0880)	0.250*** (0.0898)	0.206** (0.0881)	0.264*** (0.0923)	0.205** (0.0881)	0.263*** (0.0923)	0.198** (0.0901)	0.258*** (0.0943)
age			-0.0100*** (0.00102)	-0.00890*** (0.00107)	0.00352 (0.00406)	0.00347 (0.00436)	0.00355 (0.00385)	0.00147 (0.00408)
female			-0.423*** (0.0325)	-0.378*** (0.0326)	-0.420*** (0.0321)	-0.375*** (0.0324)	-0.420*** (0.0319)	-0.374*** (0.0325)
agesq					-0.000176*** (0.0000494)	-0.000160*** (0.0000550)	-0.000173*** (0.0000476)	-0.000128** (0.0000508)
Region Dummy	N	N	Y	Y	Y	Y	N	N
Village Fixed Effect	N	N	N	N	N	N	Y	Y
Subdistrict Fixed Effect	N	N	Y	Y	Y	Y	N	N
<i>N</i>	13402	13420	12823	12840	12823	12840	12823	12840
R-squared	0.0323	0.0387	0.0841	0.0824	0.0852	0.0834	0.131	0.139

Standard errors in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

the sample means of the variables between groups are close to each other, which also supports the setting of a parallel trend before the assumption of the model because of $E[Y_0|D = 1] = E[Y_0|D = 0]$.

2.3. Difference-in-Difference Estimation

To carry out our formal analysis, we consider the following setting:

$$Test_{itv} = \beta_0 + \beta_1 ABC_v + \beta_2 Post_v + \beta_3 (ABC_v \times Post_v) + \mathbf{X}_{iv}' + \delta cohort_v + \varepsilon_{itv} \quad (2.2)$$

where $Test_{itv}$ is the test score of individual i in village v at time t , ABC_v is a dummy variable indicating whether the village is in the treatment group, $Post_v$ is a dummy variable indicating whether the test is conducted after the program, \mathbf{X}_{iv}' is a vector of individual characteristics, $cohort_v$ is a dummy variable indicating the cohort, and ε_{itv} is the error term. The $ABC_v \times Post_v$ is our DID estimator, which represents the effect after the policy's implementation.

First of all, our DID estimation satisfies the condition of Irreversibility of Treatment. Moreover, the parallel trend condition also holds based on what we have discussed on 2.1 and 2.2. Therefore, we can conclude that our estimated effect ATT is consistent (Callaway & Sant'Anna 2021). The result is shown at Table 3.

From the table, we can see that for column (1) and (2), the coefficient of $ABC_v \times Post_v$ is positive and significant at the 1 percent level, which means that the ABC policy has a positive effect on the test score. The magnitude of the effect is 0.199 and 0.250, which means that the ABC policy can increase the test score by 19.9% to 25.0% points. This result is consistent with the previous literature, which shows that the ABC policy can improve the test score of students. In column (3) and (4) we include controls in the model, and we find that the effect is still significant at the 1 percent level, which means that the effect is robust to the inclusion of controls. Furthermore, the estimated value is close to the previous result, which means that the effect is robust to the inclusion of controls. However, it is likely the relationship between age and test scores is non-linear, therefore, we also include the quadratic term of age in the model. The result is shown in column (5) and (6), and we find that the effect is still significant at the 1 percent level, which means that the effect is robust to the inclusion of the quadratic term of age. However, the magnitude of the effect is slightly higher than the previous result, which means that the effect is sensitive to the inclusion of the quadratic term of age. The change may be due to the fact that math is pretty hard for the old people to learn, and the quadratic term of age can capture this effect, but the overall estimated result is the same. Lastly, we also include a village fixed effect in the model, and the result is shown in column (7) and (8). We find that the effect is still significant at the 1 percent level, which

TABLE 4. DDD Estimation of ABC policy

	(1) literacy	(2) math	(3) literacy	(4) math
abcpost	0.188 (0.155)	0.170 (0.136)	0.175* (0.0994)	0.259** (0.106)
abc	-0.0645 (0.0709)	-0.0920 (0.0667)	-0.0364 (0.0616)	-0.129* (0.0769)
post	-0.0647 (0.110)	-0.0723 (0.109)	0.237*** (0.0637)	0.0926 (0.0791)
cohort2009	0.0761 (0.0470)	0.150*** (0.0444)	0.0762 (0.0469)	0.149*** (0.0446)
female	-0.421*** (0.0323)	-0.377*** (0.0327)	-0.142*** (0.0489)	-0.277*** (0.0599)
age	0.00330 (0.00419)	0.00292 (0.00440)	0.00312 (0.00417)	0.00294 (0.00441)
agesq	-0.000173*** (0.0000507)	-0.000155*** (0.0000554)	-0.000171*** (0.0000506)	-0.000155*** (0.0000553)
femalepost			-0.494*** (0.0637)	-0.237*** (0.0668)
femaleabc			-0.0360 (0.0685)	0.0629 (0.0759)
abcfemalepost			0.0514 (0.0920)	-0.000982 (0.0990)
Subdistrict Fixed Effect	Y	Y	Y	Y
<i>N</i>	12823	12840	12823	12840
R-squared	0.0867	0.0906	0.0995	0.0923

Standard errors in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

means that the effect is robust to the inclusion of the village fixed effect. The magnitude of the effect is 0.198 and 0.258, which is consistent with the baseline DID estimation.

3. Heterogenous Effect of ABC program

We first consider the influence of geography on this policy, as Dosso is a region closer to the capital city, its farmers will be more inclined to go to the capital city market to trade, so they will be more active in using mobile phones because they can directly help them to get price information (Wyche & Steinfield 2016). Thus, we can use the DDD method to estimate the heterogeneous effect of geography on this policy. In addition to this, we can also consider the gender difference, because men in rural areas are the ones who mainly trade with the outside world, they will be more inclined to communicate with people in neighboring villages and towns, so men will be more inclined to use mobile phones to get more knowledge information. For this reason, we consider the DDD model further on equation (2.2) and the result is shown at Table 4.

$$\begin{aligned}
 Test_{ivt} = & \beta_0 + \beta_1 ABC_v + \beta_2 Post_v + \beta_3 Region_v + \beta_4 (ABC_v \times Post_v) + \beta_5 (ABC_v \times Effect_{ivt}) \\
 & + \beta_6 (Post_v \times Effect_{ivt}) + \beta_7 (ABC_v \times Effect_{ivt} \times Post_v) + \mathbf{X}'_{iv} + \delta cohort_v + \varepsilon_{ivt}
 \end{aligned} \tag{3.1}$$

where $Effect_{ivt}$ is the dummy variable indicating the effect of the regional spatial effect and gender inequality effect.

From the Table we can see the coefficient β_7 is not significant at 10% percent, which means that neither the regional spatial effect nor the gender inequality effect is significant, which means that the ABC policy has the same effect on different regions and different groups. Therefore, we can conclude that our estimated effect is consistent and robust.

4. Conclusion

This paper estimates the effect of the introduction of mobile phone on the test score of adult training in Niger, Dosso, and Zinder. We find that the introduction has a positive effect on the test score of students. The magnitude of the effect is 0.199 and 0.250, which means that the introduction of mobile phone usage can increase the test score by 19.9% to 25.0% points. The effect is robust to the inclusion of controls, the quadratic term of age, and the village fixed effect. Moreover, we test the hypothesis of the heterogeneous effect of geography and different gender groups, and we find that the effect is not significant, which means that the ABC policy has the same effect on different regions and different groups. Therefore, we can conclude that our estimated effect is consistent and robust.

REFERENCES

- AKER, JENNY C. 2010 Information from markets near and far: Mobile phones and agricultural markets in niger. *American Economic Journal: Applied Economics* **2** (3), 46–59.
- AKER, JENNY C. & MBITI, ISAAC M. 2010 Mobile phones and economic development in africa. *Journal of Economic Perspectives* **24** (3), 207–32.
- BARROW, LISA, MARKMAN, LISA & ROUSE, CECILIA ELENA 2009 Technology's edge: The educational benefits of computer-aided instruction. *American Economic Journal: Economic Policy* **1** (1), 52–74.
- CALLAWAY, BRANTLY & SANT'ANNA, PEDRO H.C. 2021 Difference-in-differences with multiple time periods. *Journal of Econometrics* **225** (2), 200–230, themed Issue: Treatment Effect 1.
- CHENG, YUNG-MING 2015 Towards an understanding of the factors affecting m-learning acceptance: Roles of technological characteristics and compatibility. *Asia Pacific Management Review* **20** (3), 109–119.
- GONZALEZ, ROBERT & MAFFIOLI, ELISA M. 2024 Is the phone mightier than the virus? cellphone access and epidemic containment efforts. *Journal of Development Economics* **167**, 103228.
- GRZYBOWSKI, LUKASZ & PATEL, ZUBAIR MAGHMOOD 2023 The impact of mobile phones on change in employment status in south africa. *Review of Network Economics* **22** (2), 85–114.
- ORTEGA, DANIEL & RODRÍGUEZ, FRANCISCO 2008 Freed from illiteracy? a closer look at venezuela's misión robinson literacy campaign. *Economic Development and Cultural Change* **57** (1), 1–30.
- OXENHAM, JOHN 2002 Skills and Literacy Training for Better Livelihoods : A Review of Approaches and Experiences. World Bank Publications - Reports 9767. The World Bank Group.
- SEE-TO, ERIC W.K., PAPAGIANNIDIS, SAVVAS & CHO, VINCENT 2012 User experience on mobile video appreciation: How to engross users and to enhance their enjoyment in watching mobile video clips. *Technological Forecasting and Social Change* **79** (8), 1484–1494.
- WYCHE, SUSAN & STEINFELD, CHARLES 2016 Why don't farmers use cell phones to access market prices? technology affordances and barriers to market information services adoption in rural kenya. *Information Technology for Development* **22** (2), 320–333.

Appendix A.

This appendix contains the code that is used to replicate the main result of the paper.

```
*** Program name: Sample Do File.do

* NOTE: Whenever a line begins with an asterisk, STATA ignores the whole line - this is just a
      comment/note.
capture log close
clear /* The 'clear' command gets rid of all data in memory*/
set memory 60000 /* Allocate 60MB memory to Stata */
set matsize 150
set more 1

* This line tells Stata where the files are located. USE "" if your folder names contain spaces.
* THIS IS THE ONLY LINE YOU NEED TO CHANGE.

* NOTE: The next lines set up the .log file. It will contain all of the output
* from this program when it is run. It will be saved in the same directory as the
* program and will be replaced with each new run. I have called the log-file ProblemSet1.

cd "C:\Users\zxuyuan\Downloads\02. Datasets"

log using Replication_v2.log, replace

// before using the stata do file you need to install
// esttab: ssc install estout
// outreg2: ssc install outreg2

use "ABChousehold.dta", clear

/*****TABLE 0 *****/
// Export the label and variable name

label variable age "age"
// this code is to export the name and label for further use. (make table in python)

preserve
    describe, replace clear
    list
    export excel using variable__label_correspondence.xlsx, replace first(var)
restore

use "ABCteacher.dta", clear

preserve
    describe, replace clear
    list
    export excel using variable__label_correspondence_teacher.xlsx, replace first(var)
restore

use "ABCtestscore.dta", clear
```

```

preserve
    describe, replace clear
    list
    export excel using variable__label_correspondence_test_score.xlsx, replace first(var)
restore

/*****TABLE 1 *****/
// We test whether the treatment group is assigned via non-randomization manipulation

use "ABCtestscore.dta", clear

reg writez1 abc i.avc, cluster(codev)
est store base_line_1

reg writez1 abc female age dosso i.avc, cluster(codev)
est store base_line_2

reg mathz1 abc i.avc, cluster(codev)
est store base_line_3

reg mathz1 abc female age dosso i.avc, cluster(codev)
est store base_line_4

esttab base_line_1 base_line_2 base_line_3 base_line_4 ///
    using ../manuscript/Tables/baseline_check.tex, ///
style(tex) booktabs keep(abc) ///
mtitle("log(income)" "price concession" "log(lead times)") ///
star(* 0.1 ** 0.05 *** 0.01) ///
se ///
scalars("r2 R-squared") ///
replace

/*****TABLE 2 *****/

use "ABChousehold.dta", clear

keep if year==2009

/***** NOTE *****/

// For Table one, I generated two versions
// one version is consistent with the description of the guide file
// another version is consistent with the original paper's result, because:
// I think the original paper's method is better, because it clusters the result to village level
// furthermore, it uses the subdistrict's fixed effect in the model.
// this is more robust than naive comparision of the difference

global Pre_Test_Variables age hhhead eth_hausa hhmem_no edchild_percent assets drought cellphone
accesscellphone usecellphone makecall receivecall

```

```

// summary statistics
// I will save these results to stata dta, and use python to combine the result to latex

/*
logout, save("ttest_with_result") dta replace: ttable3 $Pre_Test_Variables, by(abc) tvalue
logout, save("ttest_with_result_mean_std") dta replace: tabstat $Pre_Test_Variables, by(abc)
    stat(mean sd) nototal long col(stat)
*/

// report the mean and standard deviation

tabstat $Pre_Test_Variables, by(abc) stat(mean sd) nototal long col(stat)
outreg2 using ttest_with_result_mean_std.dta, replace

foreach i in $Pre_Test_Variables{
    xi: reg 'i' abc i.avcode, robust cluster(codev)
    outreg2 abc using "Table1_PanelA", dec(2) append dta ctitle ("'var'") nocons
}

use "ABCtestscore.dta", clear

bys codev: keep if _n==1
keep codev
merge 1:m codev using "ABCteacher.dta"

// note that during our operation, we have dropped some of the codes that are not contained in
// the test score result.
// because these are not relevant to our study.
tab _m
drop if _m==2

tabstat levelno teacherage femaleteacher local, by(abc) stat(mean sd) nototal long col(stat)
outreg2 using Table1_PanelB_mean_std.dta, replace

foreach i in levelno teacherage femaleteacher local{
    xi: reg 'i' abc i.avcode, robust cluster(codev)
    outreg2 abc using "Table1_PanelB", dec(2) append dta ctitle ("'var'") nocons
}

use "ABCtestscore.dta", clear

tabstat writez1 mathz1, by(abc) stat(mean sd) nototal long col(stat)
outreg2 using Table1_PanelC_mean_std.dta, replace

foreach i of varlist writez1 mathz1 {
    xi: reg 'i' abc i.avc, cluster(codev)
    outreg2 abc using "Table1_PanelC", dec(2) append dta ctitle ("'var'") nocons
}

```



```

}

// now run the python code in jupyter notebook to generate the latex table in paper.

/*****TABLE 3 *****/
/* Difference-In-Difference Estimation*/

use "ABCtestscore.dta", clear

keep if round==1|round==2|round==4

regress writezscore abc post abcpost i.avc, robust cluster(codev)
est store did_1

regress mathzscore abc post abcpost i.avc, robust cluster(codev)
est store did_2

regress writezscore abc post abcpost age female zarma kanuri dosso i.avc, robust cluster(codev)
est store did_3

regress mathzscore abc post abcpost age female hausa zarma kanuri dosso i.avc, robust
      cluster(codev)
est store did_4

generate agesq = age * age
regress writezscore abc post abcpost age agesq female zarma kanuri dosso i.avc, robust
      cluster(codev)
est store did_5

regress mathzscore abc post abcpost age agesq female zarma kanuri dosso i.avc, robust
      cluster(codev)
est store did_6

qui tab codevillage, gen(village_dum)

reg writezscore abc post abcpost age agesq female village_dum*, robust cluster(codev)
est store did_7

reg mathzscore abc post abcpost age agesq female village_dum*, robust cluster(codev)
est store did_8

esttab did_* ///
using ../manuscript/Tables/did_result.tex, ///
style(tex) booktabs keep(abc post abcpost age agesq female) ///
mtitle("literacy" "math" "literacy" "math" "literacy" "math" "literacy" "math") ///
star(* 0.1 ** 0.05 *** 0.01) ///
se ///
scalars("r2 R-squared") ///
replace

```

```

/*****TABLE 4 *****/
/* Difference-In-Difference-In-Difference Estimation*/

use "ABCtestscore.dta", clear

keep if round==1|round==2|round==4

generate agesq = age * age
capture drop region regionpost regionabc abcregionpost
gen region=dosso==1
gen regionpost=region*post
gen regionabc=region*abc
gen abcregionpost=regionabc*post

reg writezscore abcpst abc post region regionpost regionabc abcregionpost cohort2009 female age
    agesq i.avc, robust cluster(codev)
est store ddd_1

reg mathzscore abcpst abc post region regionpost regionabc abcregionpost cohort2009 female age
    agesq i.avc, robust cluster(codev)
est store ddd_2

reg writezscore abc female post femalepost femaleabc abcpst abcfemalepost cohort2009 age agesq
    i.avc, robust cluster(codev)
est store ddd_3

reg mathzscore abc female post femalepost femaleabc abcpst abcfemalepost cohort2009 age agesq
    i.avc, robust cluster(codev)
est store ddd_4

esttab ddd_* ///
    using ../manuscript/Tables/ddd.tex, ///
style(tex) booktabs keep(abc female post femalepost femaleabc abcpst abcfemalepost cohort2009
    age agesq) ///
mtitle("literacy" "math" "literacy" "math") ///
star(* 0.1 ** 0.05 *** 0.01) ///
se ///
scalars("r2 R-squared") ///
replace

log close
exit, clear

```

```

-----
      name: <unnamed>
      log: C:\Users\zxuyuan\Downloads\02. Datasets\Replication_v2.log
      log type: text
      opened on: 27 Mar 2024, 09:33:48

.
. // before using the stata do file you need to install
. // esttab: ssc install estout
. // outreg2: ssc install outreg2
.
. use "ABChousehold.dta", clear

.
. /*****TABLE 0 *****/
. // Export the label and variable name
.
. label variable age "age"

. // this code is to export the name and label for further use. (make table in p
> ython)
.
. preserve

. describe, replace clear

. list

1. | position |          name | type | isnume~c | format | vallab |
   |         1 |      codemenage | str8 |          0 |    %9s |        |
   |-----|-----|-----|-----|-----|-----|
   |                                     varlab |
   |                                     Household Code |
   |-----|-----|-----|-----|-----|

2. | position |          name | type | isnume~c | format | vallab |
   |         2 |      codevillage | str4 |          0 |    %9s |        |
   |-----|-----|-----|-----|-----|
   |                                     varlab |
   |                                     Four-Digit Village Code |
   |-----|-----|-----|-----|-----|

3. | position |          name | type | isnume~c | format | vallab |
   |         3 |      village | str28 |          0 |   %28s |        |
   |-----|-----|-----|-----|-----|
   |                                     varlab |
   |                                     Village Name |
   |-----|-----|-----|-----|-----|

4. | position |          name | type | isnume~c | format | vallab |
   |         4 |      year | int |          1 |   %9.0g |        |
   |-----|-----|-----|-----|-----|
   |                                     varlab |
   |                                     2009, 2010 or 2011 |
   |-----|-----|-----|-----|-----|

5. | position |          name | type | isnume~c | format | vallab |
   |         5 |      time | byte |          1 |   %9.0g |        |

```

							varlab
6.	position 6	name dept	type byte	isnume~c 1	format %12.0g	vallab	
						varlab	id2 Dept, 31=Doutchi, 32=Loga, 71=Tanout, 72=Mirriah
7.	position 7	name region	type byte	isnume~c 1	format %9.0g	vallab region	
						varlab	Region 3=Doutchi, 7=Zinder
8.	position 8	name avcode	type byte	isnume~c 1	format %9.0g	vallab	
						varlab	Subdistrict;Extensiton worker id
9.	position 9	name abc	type byte	isnume~c 1	format %9.0g	vallab	
						varlab	ABC Village in 2009 or 2010
10.	position 10	name cohort	type int	isnume~c 1	format %9.0g	vallab	
						varlab	Cohort
11.	position 11	name post	type byte	isnume~c 1	format %9.0g	vallab	
						varlab	Post Literacy Programme
12.	position 12	name hhhead	type byte	isnume~c 1	format %12.0g	vallab	
						varlab	id11 Are you the household head?
13.	position	name	type	isnume~c	format	vallab	

	13	age	byte	1	%8.0g		
						varlab	
						age	
14.	position	name	type	isnume~c	format	vallab	
	14	eth_hausa	byte	1	%9.0g		
						varlab	
						Respondent is Hausa	
15.	position	name	type	isnume~c	format	vallab	
	15	hmem_no	byte	1	%9.0g		
						varlab	
						Number of household members	
16.	position	name	type	isnume~c	format	vallab	
	16	edchild_percent	float	1	%9.0g		
						varlab	
						Percentage of children under 15 who have some education	
17.	position	name	type	isnume~c	format	vallab	
	17	assets	byte	1	%9.0g		
						varlab	
						Number of asset categories owned by household	
18.	position	name	type	isnume~c	format	vallab	
	18	cellphone	byte	1	%12.0g		
						varlab	
						s22q1_15a Household owns a cell phone (excluding group phone)	
19.	position	name	type	isnume~c	format	vallab	
	19	cellphoneowner	byte	1	%12.0g		
						varlab	
						s23q1 Respondent is owner of household cell phone	
20.	position	name	type	isnume~c	format	vallab	
	20	accesscellphone	byte	1	%9.0g		
						varlab	
						Access to household or village-level cell phone	

21.	position 21	name usecellphone	type byte	isnum-c 1	format %12.0g	vallab
varlab Respondent has used cell phone since last harvest						
22.	position 22	name makecall	type byte	isnum-c 1	format %12.0g	vallab
varlab s23q9_1 Respondent has made call						
23.	position 23	name receivecall	type byte	isnum-c 1	format %12.0g	vallab
varlab s23q9_2 Respondent has received call						
24.	position 24	name writesms	type byte	isnum-c 1	format %12.0g	vallab
varlab s23q9_3 Respondent has written SMS						
25.	position 25	name receivesms	type byte	isnum-c 1	format %12.0g	vallab
varlab s23q9_4 Respondent has received SMS						
26.	position 26	name bip	type byte	isnum-c 1	format %12.0g	vallab
varlab s23q9_5 Respondent has sent bip						
27.	position 27	name receivebip	type byte	isnum-c 1	format %12.0g	vallab
varlab s23q9_6 Respondent has received bip						
28.	position 28	name madetransferSMS	type byte	isnum-c 1	format %12.0g	vallab
varlab s23q9_9 Respondent made transfer SMS 2010						

```

+-----+
29. | position |          name | type | isnum~c | format | vallab |
    |      29 | receivedtransferSMS | byte |      1 | %12.0g |        |
    +-----+
    |                                          varlab |
    | s23q9_10 Respondent received transfer SMS 2010 |
    +-----+

+-----+
30. | position |          name | type | isnum~c | format | vallab |
    |      30 | celltalkmigrant | byte |      1 | %12.0g |        |
    +-----+
    |                                          varlab |
    | s23q10_1 Respondent used cell phone to talk to migrant |
    +-----+

+-----+
31. | position |          name | type | isnum~c | format | vallab |
    |      31 | celltalkrelativeniger | byte |      1 | %12.0g |        |
    +-----+
    |                                          varlab |
    | s23q10_2 Respondent used cell phone to talk to relative in Niger |
    +-----+

+-----+
32. | position |          name | type | isnum~c | format | vallab |
    |      32 | celltalktradeniger | byte |      1 | %12.0g |        |
    +-----+
    |                                          varlab |
    | s23q10_3 Respondent used cell phone to talk about trade within Niger |
    +-----+

+-----+
33. | position |          name | type | isnum~c | format | vallab |
    |      33 | whycell_ceremony | byte |      1 | %12.0g |        |
    +-----+
    |                                          varlab |
    | s23q11_2 Use cell to communicate ceremony |
    +-----+

+-----+
34. | position |          name | type | isnum~c | format | vallab |
    |      34 | whycell_priceinfo | byte |      1 | %12.0g |        |
    +-----+
    |                                          varlab |
    | s23q11_4 Use cell to get price info |
    +-----+

+-----+
35. | position |          name | type | isnum~c | format | vallab |
    |      35 | whycell_help | byte |      1 | %12.0g |        |
    +-----+
    |                                          varlab |
    | s23q11_5 Use cell to ask for help |
    +-----+

+-----+
36. | position |          name | type | isnum~c | format | vallab |
    |      36 | drought | byte |      1 | %12.0g |        |
    +-----+
    |                                          varlab |
    | s8q3_1 Household experienced drought in past year |
    +-----+

```

```

+-----+
37. | position |          name | type | isnum~c | format | vallab |
    |        37 | communicate_migrant | byte |        1 | %9.0g |
    +-----+
    |                                     varlab
    | Household communicated with most recent migrant since the last harvest |
    +-----+

.      export excel using variable__label_correspondence.xlsx, replace first(var)
file variable__label_correspondence.xlsx saved

. restore

.
. use "ABCteacher.dta", clear

.
. preserve

.      describe, replace clear

.      list

+-----+
1. | position |          name | type | isnum~c | format | vallab |
   |        1 |   codevillage | float |        1 | %9.0g |
   +-----+
   |                                     varlab
   |                               Village Code
   +-----+

+-----+
2. | position |          name | type | isnum~c | format | vallab |
   |        2 |          class | float |        1 | %9.0g |
   +-----+
   |                                     varlab
   |                               Class code
   +-----+

+-----+
3. | position |          name | type | isnum~c | format | vallab |
   |        3 |          year | int |        1 | %8.0g |
   +-----+
   |                                     varlab
   |                               Year
   +-----+

+-----+
4. | position |          name | type | isnum~c | format | vallab |
   |        4 |   teacherage | byte |        1 | %8.0g |
   +-----+
   |                                     varlab
   |                               Age of Teacher
   +-----+

+-----+
5. | position |          name | type | isnum~c | format | vallab |
   |        5 |       levelno | byte |        1 | %8.0g |
   +-----+
   |                                     varlab
   | Level of Instruction of Teacher
   +-----+

```



```
+-----+-----+-----+-----+-----+-----+
6. | position | name      | type   | isnum=c | format    | varlab     |
   +-----+-----+-----+-----+-----+-----+
   |          | femaleteacher | byte   |         1 | %8.0g     |            |
   +-----+-----+-----+-----+-----+-----+
                                   varlab
                                   Female Teacher
```

```

7.  +-----+-----+-----+-----+-----+-----+
    | position |      name | type | isnum=c | format | varlab |
    |         | femalecenter | byte |         | %8.0g |         |
    +-----+-----+-----+-----+-----+-----+
    |                                     varlab |
    |                                     Female Class |
    +-----+-----+-----+-----+-----+

```

```
+-----+
8. | position |          name | type | isnum=c | format | varlab  
   |         8 |        local | byte |       1 | %8.0g |  
   +-----+  
               varlab  
           Teacher from Same Village
```

```

+-----+-----+-----+-----+-----+-----+
9. | position |      name | type | isnum=c | format | vallab |
   |         9 |    region | float |         1 | %9.0g |         |
+-----+-----+-----+-----+-----+
                                   varlab
                                   Dosso Region = 1 Zinder =0
+-----+-----+-----+-----+-----+

```

position	name	type	isnum=c	format	vallab
10	cohort	float	1	%9.0g	
				varlab	
				Cohort	

```

11. | position |          name | type | isnum~c | format | varlab
    |         11 |          abc | byte |         1 | %9.0g |
    |-----|-----|-----|-----|-----|-----|
    |                                     varlab
    |                                ABC village
    |
    +

```

12.	position	name	type	isnum-c	format	vallab
	12	avcode	byte	1	%9.0g	
						varlab
		Subdistrict;Extensiton worker id				

```
. export excel using variable__label_correspondence_teacher.xlsx, replace fi
> rst(var)
file variable__label_correspondence_teacher.xlsx saved

. restore
```

```
. use "ABCtestscore.dta", clear
```

- preserve

```
. describe, replace clear
```

```
. list
```

position	name	type	isnum-c	format	vallab
1	codevillage	double	1	%9.0g	
varlab Village Code					

2.	position	name	type	isnum-c	format	vallab
	2	class	float	1	%9.0g	
	varlab					
	Class code					

position	name	type	isnum-c	format	vallab
3	round	byte	1	%9.0g	
varlab					
round of literacy data-collection					

```

4. | position | name | type | isnum-c | format | varlab |
   | 4 | timesinceliteracy | byte | 1 | %9.0g | TIMESINCE |
   |-----|-----|
   |                                     varlab
   | timesince since literacy project started

```

position	name	type	isnum-c	format	vallab
5	write	double	1	%9.0g	

varlab
Score on writing Test

position	name	type	isnum-c	format	vallab
6	math	double	1	%9.0g	

varlab
Score on Math Test

7.	position	name	type	isnum-c	format	vallab
	7	absent	byte	1	%9.0g	
						varlab

	Absent on date of test					
8.	position	name	type	isnume~c	format	vallab
	8	region	byte	1	%8.0g	
	varlab Region					
9.	position	name	type	isnume~c	format	vallab
	9	days1	byte	1	%9.0g	
	varlab Number of Class days in month 1					
10.	position	name	type	isnume~c	format	vallab
	10	days2	byte	1	%9.0g	
	varlab Number of Class days in month 2					
11.	position	name	type	isnume~c	format	vallab
	11	days3	byte	1	%9.0g	
	varlab Number of Class days in month 3					
12.	position	name	type	isnume~c	format	vallab
	12	attend1	byte	1	%9.0g	
	varlab # Class days attenden in month1					
13.	position	name	type	isnume~c	format	vallab
	13	attend2	byte	1	%9.0g	
	varlab # Class days attenden in month2					
14.	position	name	type	isnume~c	format	vallab
	14	attend3	byte	1	%9.0g	
	varlab # Class days attenden in month3					
15.	position	name	type	isnume~c	format	vallab
	15	days4	byte	1	%9.0g	

							varlab	
							Number of Class days in month 4	
16.	position		name	type	isnume~c	format	vallab	
	16		attend4	byte	1	%9.0g		
							varlab	
							# Class days attenden in month4	
17.	position		name	type	isnume~c	format	vallab	
	17		cohort	float	1	%8.0g		
							varlab	
							literacy cohort 09 or 10	
18.	position		name	type	isnume~c	format	vallab	
	18		female	byte	1	%9.0g		
							varlab	
							Female	
19.	position		name	type	isnume~c	format	vallab	
	19		district	byte	1	%9.0g		
							varlab	
							District	
20.	position		name	type	isnume~c	format	vallab	
	20		baseline	byte	1	%8.0g		
							varlab	
							Village is in Baseline Sample	
21.	position		name	type	isnume~c	format	vallab	
	21		abc	byte	1	%9.0g		
							varlab	
							ABC or non-ABC village	
22.	position		name	type	isnume~c	format	vallab	
	22		avcode	byte	1	%9.0g		
							varlab	
							Subdistrict;Extensiton worker id	
23.	position		name	type	isnume~c	format	vallab	
	23		abc2009	float	1	%9.0g		

	varlab ABC village in 2009 Cohort						
24.	position 24	name abc2010	type float	isnum~c 1	format %9.0g	vallab	
	varlab ABC village in 2010 Cohort						
25.	position 25	name lit2009	type float	isnum~c 1	format %9.0g	vallab	
	varlab 2009 Cohort						
26.	position 26	name lit2010	type float	isnum~c 1	format %9.0g	vallab	
	varlab 2010 Cohort						
27.	position 27	name age2009	type byte	isnum~c 1	format %9.0g	vallab	
	varlab Age in 2009						
28.	position 28	name year	type float	isnum~c 1	format %9.0g	vallab	
	varlab year of data-collection						
29.	position 29	name dosso	type byte	isnum~c 1	format %9.0g	vallab	
	varlab Dosso Region = 1 Zinder =0						
30.	position 30	name hausa	type float	isnum~c 1	format %9.0g	vallab	
	varlab Hausa village						
31.	position	name	type	isnum~c	format	vallab	

	31	zarma	float	1	%9.0g	
						varlab Zarma village
32.	position 32	name kanuri	type float	isnume~c 1	format %9.0g	vallab
						varlab Kanuri
33.	position 33	name village	type str29	isnume~c 0	format %29s	vallab
						varlab village name
34.	position 34	name villagecode	type byte	isnume~c 1	format %9.0g	vallab
						varlab 2-digit villagecode
35.	position 35	name langue	type str5	isnume~c 0	format %5s	vallab
						varlab language
36.	position 36	name age	type float	isnume~c 1	format %9.0g	vallab
						varlab Age - missing values imputed
37.	position 37	name ageabc	type float	isnume~c 1	format %9.0g	vallab
						varlab
38.	position 38	name young	type float	isnume~c 1	format %9.0g	vallab
						varlab Age 19 and below

39.	position	name	type	isnume~c	format	vallab
	39	totalattend	float	1	%9.0g	
						varlab
						Number Classes Attended
40.	position	name	type	isnume~c	format	vallab
	40	totaldays	float	1	%9.0g	
						varlab
						Number Classes Held
41.	position	name	type	isnume~c	format	vallab
	41	percentattend	float	1	%9.0g	
						varlab
						Percentage of Classes Attended
42.	position	name	type	isnume~c	format	vallab
	42	totalattend12	float	1	%9.0g	
						varlab
						# Classes Attended; Month 1&2
43.	position	name	type	isnume~c	format	vallab
	43	totalattend34	float	1	%9.0g	
						varlab
						# Classes Attended; Month 3&4
44.	position	name	type	isnume~c	format	vallab
	44	totaldays12	float	1	%9.0g	
						varlab
						# Classes Held; Month 1&2
45.	position	name	type	isnume~c	format	vallab
	45	totaldays34	float	1	%9.0g	
						varlab
						# Classes Held; Month 3&4
46.	position	name	type	isnume~c	format	vallab
	46	percentattend12	float	1	%9.0g	
						varlab
						% Classes Attended; Month 1&2

47.	position 47	name percentattend34	type float	isnume~c 1	format %9.0g	vallab
varlab % Classes Attended; Month 3&4						
48.	position 48	name post	type float	isnume~c 1	format %9.0g	vallab
varlab Post						
49.	position 49	name abcpst	type float	isnume~c 1	format %9.0g	vallab
varlab ABC treatment (i.e. ABC * Treatment)						
50.	position 50	name post5m	type float	isnume~c 1	format %9.0g	vallab
varlab Post (5 months)						
51.	position 51	name abcpst5m	type float	isnume~c 1	format %9.0g	vallab
varlab ABC*Post (5 months)						
52.	position 52	name post11m	type float	isnume~c 1	format %9.0g	vallab
varlab Post (11 months)						
53.	position 53	name abcpst11m	type float	isnume~c 1	format %9.0g	vallab
varlab ABC*Post (11 months)						
54.	position 54	name post17m	type float	isnume~c 1	format %9.0g	vallab
varlab Post (17 months)						

55.	position 55	name abcpost17m	type float	isnume~c 1	format %9.0g	vallab
varlab ABC*Post (17 months)						
56.	position 56	name post6monthafter	type float	isnume~c 1	format %9.0g	vallab
varlab						
57.	position 57	name abcpost6monthafter	type float	isnume~c 1	format %9.0g	vallab
varlab						
58.	position 58	name femaleabc	type float	isnume~c 1	format %9.0g	vallab
varlab Female * ABC						
59.	position 59	name femalepost	type float	isnume~c 1	format %9.0g	vallab
varlab Female * Post						
60.	position 60	name abcfemalepost	type float	isnume~c 1	format %9.0g	vallab
varlab Female * ABC * Post						
61.	position 61	name regionabc	type float	isnume~c 1	format %9.0g	vallab
varlab Region = Dosso * ABC						
62.	position 62	name regionpost	type float	isnume~c 1	format %9.0g	vallab
varlab Region = Dosso* Post						

+-----+						
63.	position	name	type	isnume~c	format	vallab
	63	abcregionpost	float	1	%9.0g	
+-----+						
					varlab	
					Region = Dosso * ABC * Post	
+-----+						
64.	position	name	type	isnume~c	format	vallab
	64	youngabc	float	1	%9.0g	
+-----+						
					varlab	
					Young * ABC	
+-----+						
65.	position	name	type	isnume~c	format	vallab
	65	youngpost	float	1	%9.0g	
+-----+						
					varlab	
					Young * Post	
+-----+						
66.	position	name	type	isnume~c	format	vallab
	66	abcyounpost	float	1	%9.0g	
+-----+						
					varlab	
					Young * ABC * Post	
+-----+						
67.	position	name	type	isnume~c	format	vallab
	67	cohort2009	float	1	%9.0g	
+-----+						
					varlab	
+-----+						
68.	position	name	type	isnume~c	format	vallab
	68	mathzscore	float	1	%9.0g	
+-----+						
					varlab	
					Numeracy test Z-score	
+-----+						
69.	position	name	type	isnume~c	format	vallab
	69	writetzscore	float	1	%9.0g	
+-----+						
					varlab	
					Literacy test Z-score	
+-----+						
70.	position	name	type	isnume~c	format	vallab
	70	math1	float	1	%9.0g	
+-----+						
					varlab	

	Baseline numeracy test score					
71.	position	name	type	isnume~c	format	vallab
	71	mathz1	float	1	%9.0g	
	varlab					
	Baseline numeracy test Z-score					
72.	position	name	type	isnume~c	format	vallab
	72	math2	float	1	%9.0g	
	varlab					
	5-month numeracy test score					
73.	position	name	type	isnume~c	format	vallab
	73	math3	float	1	%9.0g	
	varlab					
	12-month numeracy test score					
74.	position	name	type	isnume~c	format	vallab
	74	math4	float	1	%9.0g	
	varlab					
	17 month numeracy test score					
75.	position	name	type	isnume~c	format	vallab
	75	math5	float	1	%9.0g	
	varlab					
	24 month numeracy test score					
76.	position	name	type	isnume~c	format	vallab
	76	write1	float	1	%9.0g	
	varlab					
	Baseline literacy test score					
77.	position	name	type	isnume~c	format	vallab
	77	writez1	float	1	%9.0g	
	varlab					
	Baseline literacy test Z-score					
78.	position	name	type	isnume~c	format	vallab
	78	write2	float	1	%9.0g	

```

|                                     varlab
|                                     5-month literacy test score
+-----+-----+-----+-----+-----+-----+
79. | position |          name | type | isnum-c | format |   vallab |
|      79 |         write3 | float |      1 | %9.0g |         |
|-----+-----+-----+-----+-----+
|                                     varlab
|                                     12-month literacy test score
+-----+-----+-----+-----+-----+
80. | position |          name | type | isnum-c | format |   vallab |
|      80 |         write4 | float |      1 | %9.0g |         |
|-----+-----+-----+-----+-----+
|                                     varlab
|                                     17 month literacy test score
+-----+-----+-----+-----+-----+
81. | position |          name | type | isnum-c | format |   vallab |
|      81 |         write5 | float |      1 | %9.0g |         |
|-----+-----+-----+-----+-----+
|                                     varlab
|                                     24 month literacy test score
+-----+-----+-----+-----+-----+

```

```

. export excel using variable__label_correspondence_test_score.xlsx, replace
> first(var)
file variable__label_correspondence_test_score.xlsx saved

```

```

. restore

```

```

. /*****TABLE 1 *****/
. // We test whether the treatment group is assigned via non-randomization manip
> ulation
. use "ABCTestScore.dta", clear
.
. reg writez1 abc i.avc, cluster(codev)

```

```

Linear regression              Number of obs   =      5,982
                             F(23, 112)       =      4.22
                             Prob > F         =      0.0000
                             R-squared        =      0.0224
                             Root MSE     =      .9347

```

(Std. err. adjusted for 113 clusters in codevillage)

writez1	Coefficient	Robust std. err.	t	P> t	[95% conf. interval]
abc	-.0230921	.0399616	-0.58	0.565	-.1022709 .0560867
avcode					
2	-.2052144	.1216767	-1.69	0.094	-.4463011 .0358723
3	-.3711898	.0773765	-4.80	0.000	-.5245013 -.2178782
4	-.3032091	.0811349	-3.74	0.000	-.4639674 -.1424508
5	-.2361261	.0929439	-2.54	0.012	-.4202826 -.0519696
6	-.3646186	.0790297	-4.61	0.000	-.5212059 -.2080313

8	-.3464581	.083205	-4.16	0.000	-.5113182	-.181598
9	-.2341432	.111874	-2.09	0.039	-.4558072	-.0124791
10	-.0489395	.2207886	-0.22	0.825	-.4864039	.3885248
11	-.3634914	.0869115	-4.18	0.000	-.5356955	-.1912874
12	-.27556	.0900153	-3.06	0.003	-.4539138	-.0972062
13	-.3252861	.0807738	-4.03	0.000	-.485329	-.1652432
14	-.2848496	.0958569	-2.97	0.004	-.4747777	-.0949214
15	-.1754577	.1762696	-1.00	0.322	-.5247133	.1737979
16	.1108725	.1750943	0.63	0.528	-.2360545	.4577995
17	-.3840173	.0773277	-4.97	0.000	-.5372323	-.2308023
18	-.0624857	.1315787	-0.47	0.636	-.3231921	.1982207
19	-.3935956	.0776814	-5.07	0.000	-.5475114	-.2396798
20	-.3272519	.08237	-3.97	0.000	-.4904574	-.1640463
21	-.3633844	.0784376	-4.63	0.000	-.5187985	-.2079702
22	-.1000956	.1718358	-0.58	0.561	-.4405661	.240375
23	-.3799316	.0744152	-5.11	0.000	-.5273757	-.2324874
24	-.3851199	.0748474	-5.15	0.000	-.5334204	-.2368195
_cons	.2450349	.0808129	3.03	0.003	.0849145	.4051553

. est store base_line_1

. reg writez1 abc female age dosso i.avc, cluster(codev)
note: 21.avcode omitted because of collinearity.

Linear regression	Number of obs	=	5,675
	F(25, 112)	=	4.60
	Prob > F	=	0.0000
	R-squared	=	0.0278
	Root MSE	=	.94619

(Std. err. adjusted for 113 clusters in codevillage)

writez1	Coefficient	Robust std. err.	t	P> t	[95% conf. interval]	
abc	-.0291124	.0420198	-0.69	0.490	-.1123693	.0541444
female	-.1334548	.0348153	-3.83	0.000	-.202437	-.0644727
age	-.0023578	.0010405	-2.27	0.025	-.0044195	-.0002962
dosso	.3588156	.084329	4.25	0.000	.1917286	.5259026
avcode						
2	.1542814	.0995278	1.55	0.124	-.0429202	.351483
3	-.3674662	.0828107	-4.44	0.000	-.5315449	-.2033874
4	-.2926411	.0857275	-3.41	0.001	-.4624992	-.122783
5	-.2384126	.0969158	-2.46	0.015	-.4304388	-.0463864
6	-.0092147	.0337783	-0.27	0.786	-.0761421	.0577126
8	.0091788	.0435093	0.21	0.833	-.0770293	.0953869
9	.113174	.0922615	1.23	0.223	-.0696304	.2959784
10	.297619	.2343227	1.27	0.207	-.1666615	.7618995
11	-.0102384	.0601511	-0.17	0.865	-.1294202	.1089433
12	.0902157	.0561096	1.61	0.111	-.0209583	.2013897
13	-.3181553	.0860715	-3.70	0.000	-.4886949	-.1476157
14	-.2914032	.0995354	-2.93	0.004	-.4886199	-.0941866
15	-.1725761	.1792665	-0.96	0.338	-.5277696	.1826175
16	.1170906	.1779624	0.66	0.512	-.235519	.4697002
17	-.0548059	.028267	-1.94	0.055	-.1108132	.0012014
18	.3245622	.1093285	2.97	0.004	.1079417	.5411827
19	-.3930823	.0831724	-4.73	0.000	-.5578777	-.2282869
20	.0254368	.0483266	0.53	0.600	-.0703161	.1211898
21	0	(omitted)				

22		-.1052079	.1740995	-0.60	0.547	-.4501637	.2397479
23		-.3819689	.0795201	-4.80	0.000	-.5395278	-.22441
24		-.3764139	.0802293	-4.69	0.000	-.535378	-.2174498
_cons		.0421313	.0509929	0.83	0.410	-.0589046	.1431672

. est store base_line_2

.
 . reg mathz1 abc i.avc, cluster(codev)

Linear regression

Number of obs	=	5,982
F(23, 112)	=	8.16
Prob > F	=	0.0000
R-squared	=	0.0199
Root MSE	=	.90412

(Std. err. adjusted for 113 clusters in codevillage)

mathz1	Coefficient	Robust std. err.	t	P> t	[95% conf. interval]	
abc	-.0593326	.0468961	-1.27	0.208	-.1522512	.033586
avcode						
2	.0625439	.0924042	0.68	0.500	-.1205432	.245631
3	-.0176523	.1308971	-0.13	0.893	-.2770082	.2417035
4	-.0692193	.1275946	-0.54	0.589	-.3220315	.183593
5	-.1202344	.0840566	-1.43	0.155	-.2867818	.046313
6	-.2029252	.0670745	-3.03	0.003	-.3358247	-.0700256
8	-.186536	.0744624	-2.51	0.014	-.3340736	-.0389983
9	-.0735696	.1021616	-0.72	0.473	-.2759897	.1288505
10	.1028629	.1989149	0.52	0.606	-.2912615	.4969873
11	-.2015216	.0855893	-2.35	0.020	-.3711059	-.0319373
12	-.1222683	.0767666	-1.59	0.114	-.2743715	.029835
13	-.0344487	.1303188	-0.26	0.792	-.2926587	.2237613
14	-.2170937	.0755794	-2.87	0.005	-.3668447	-.0673428
15	.0899308	.2432233	0.37	0.712	-.3919851	.5718466
16	.080392	.1371445	0.59	0.559	-.1913423	.3521263
17	-.211454	.0705392	-3.00	0.003	-.3512185	-.0716895
18	.1173407	.1053573	1.11	0.268	-.0914114	.3260927
19	-.2039475	.1308492	-1.56	0.122	-.4632085	.0553135
20	-.1537888	.0782359	-1.97	0.052	-.3088033	.0012257
21	-.2009937	.0712221	-2.82	0.006	-.3421111	-.0598763
22	-.0865498	.1337841	-0.65	0.519	-.3516259	.1785262
23	-.277167	.0664611	-4.17	0.000	-.4088512	-.1454829
24	-.2904979	.0670077	-4.34	0.000	-.4232651	-.1577307
_cons	.0819325	.073604	1.11	0.268	-.0639045	.2277694

. est store base_line_3

.
 . reg mathz1 abc female age dosso i.avc, cluster(codev)
 note: 21.avcode omitted because of collinearity.

Linear regression

Number of obs	=	5,675
F(25, 112)	=	8.04
Prob > F	=	0.0000
R-squared	=	0.0339
Root MSE	=	.91184

(Std. err. adjusted for 113 clusters in codevillage)

mathz1	Coefficient	Robust std. err.	t	P> t	[95% conf. interval]	
abc	-.0671249	.0494956	-1.36	0.178	-.1651941	.0309443
female	-.2175978	.0375091	-5.80	0.000	-.2919172	-.1432783
age	-.0015332	.0010447	-1.47	0.145	-.0036032	.0005368
dosso	.1969197	.0761977	2.58	0.011	.0459436	.3478958
avcode						
2	.2634692	.0686632	3.84	0.000	.1274219	.3995165
3	-.0188015	.1321897	-0.14	0.887	-.2807184	.2431155
4	-.0640936	.1285905	-0.50	0.619	-.3188793	.190692
5	-.1254464	.0882364	-1.42	0.158	-.3002755	.0493828
6	-.0091999	.0287968	-0.32	0.750	-.066257	.0478571
8	.0107621	.0454534	0.24	0.813	-.0792981	.1008222
9	.1125617	.0897686	1.25	0.212	-.0653033	.2904268
10	.2863779	.2119594	1.35	0.179	-.1335926	.7063483
11	-.0095482	.0738564	-0.13	0.897	-.1558851	.1367888
12	.079682	.0468187	1.70	0.092	-.0130832	.1724473
13	-.0329992	.1333292	-0.25	0.805	-.2971739	.2311755
14	-.2241771	.0792723	-2.83	0.006	-.381245	-.0671093
15	.0886956	.2427696	0.37	0.716	-.3923213	.5697124
16	.080078	.1396942	0.57	0.568	-.1967081	.3568642
17	-.0378795	.0341381	-1.11	0.270	-.1055198	.0297608
18	.3419282	.087637	3.90	0.000	.1682867	.5155698
19	-.2073141	.1355479	-1.53	0.129	-.4758848	.0612566
20	.0404889	.0578061	0.70	0.485	-.0740465	.1550242
21	0 (omitted)					
22	-.0932146	.1367998	-0.68	0.497	-.3642659	.1778366
23	-.2794646	.0713104	-3.92	0.000	-.420757	-.1381722
24	-.2860503	.0719926	-3.97	0.000	-.4286944	-.1434063
_cons	.0564463	.0536035	1.05	0.295	-.0497622	.1626549

```
. est store base_line_4
```

```
.
. esttab base_line_1 base_line_2 base_line_3 base_line_4 ///
> using ../manuscript/Tables/baseline_check.tex, ///
> style(tex) booktabs keep(abc) ///
> mtitle("log(income)" "price concession" "log(lead times)") ///
> star(* 0.1 ** 0.05 *** 0.01) ///
> se ///
> scalars("r2 R-squared") ///
> replace
(output written to ../manuscript/Tables/baseline_check.tex)
```

```
.
. /*****TABLE 2 *****/
```

```
. use "ABHousehold.dta", clear
```

```
.
. keep if year==2009
(2,059 observations deleted)
```

```
.
. /***** NOTE *****/
```

```

. // For Table one, I generated two versions
. // one version is consistent with the description of the guide file
. // another version is consistent with the original paper's result, because:
. // I think the original paper's method is better, because it clusters the resu
> lt to village level
. // furthermore, it uses the subdistrict's fixed effect in the model.
. // this is more robust than naive comparision of the difference
.
. global Pre_Test_Variables age hhhead eth_hausa hhmem_no edchild_percent assets
> drought cellphone accesscellphone usecellphone makecall receivecall

.
. // summary statistics
. // I will save these results to stata dta, and use python to combine the resul
> t to latex
.
. /*
> logout, save("ttest_with_result") dta replace: ttable3 $Pre_Test_Variables, by
> (abc) tvalue
> logout, save("ttest_with_result_mean_std") dta replace: tabstat $Pre_Test_Vari
> ables, by(abc) stat(mean sd) nototal long col(stat)
> */
.
. // report the mean and standard deviation
.
. tabstat $Pre_Test_Variables, by(abc) stat(mean sd) nototal long col(stat)

```

abc	Variable	Mean	SD
0	age	37.86127	13.09617
	hhhead	.5600775	.4968593
	eth_hausa	.7148362	.451928
	hhmem_no	8.421965	4.053834
	edchild_pe~t	.2786161	.2756192
	assets	4.990366	1.608947
	drought	.3853565	.487149
	cellphone	.2959381	.4569054
	accesscell~e	.7630058	.425649
	usecellphone	.5420744	.4987148
	makecall	.6909091	.4629612
	receivecall	.8581818	.3494996
1	age	37.17534	11.75794
	hhhead	.5473888	.4982313
	eth_hausa	.7206166	.4491292
	hhmem_no	8.327553	4.074195
	edchild_pe~t	.2685527	.2697695
	assets	4.978805	1.574879
	drought	.3795761	.4857496
	cellphone	.2953668	.4566485
	accesscell~e	.7976879	.4021113
	usecellphone	.5728155	.4951504
	makecall	.7254237	.4470589
	receivecall	.8677966	.3392873

```

. -----
.
. outreg2 using ttest_with_result_mean_std.dta, replace
dir : seeout
.
.
. foreach i in $Pre_Test_Variables{
2.     xi: reg `i' abc i.avcode, robust cluster(codev)

```



```

3.      outreg2 abc using "Table1_PanelA", dec(2) append dta ctitle ("`var'
> ")   nocons
4. }
i.avcode      _Iavcode_1-22      (naturally coded; _Iavcode_1 omitted)

```

```

Linear regression      Number of obs      =      1,038
                      F(21, 94)          =      10.09
                      Prob > F            =      0.0000
                      R-squared           =      0.1039
                      Root MSE          =      11.901

```

(Std. err. adjusted for 95 clusters in codevillage)

	age	Coefficient	Robust std. err.	t	P> t	[95% conf. interval]	
abc		-.3567906	.9311367	-0.38	0.702	-2.205584	1.492003
_Iavcode_2		-.6610624	3.343874	-0.20	0.844	-7.300403	5.978278
_Iavcode_3		-.9478003	3.130994	-0.30	0.763	-7.164462	5.268861
_Iavcode_4		3.823123	3.399385	1.12	0.264	-2.926436	10.57268
_Iavcode_5		2.704856	3.576323	0.76	0.451	-4.396017	9.805729
_Iavcode_6		-2.235679	4.063755	-0.55	0.584	-10.30436	5.833003
_Iavcode_8		-8.14477	2.965209	-2.75	0.007	-14.03226	-2.257279
_Iavcode_9		-8.085305	2.985504	-2.71	0.008	-14.01309	-2.157517
_Iavcode_10		-6.476962	3.264558	-1.98	0.050	-12.95882	.0048938
_Iavcode_11		-5.690225	2.878396	-1.98	0.051	-11.40535	.0248986
_Iavcode_12		-2.28954	3.854208	-0.59	0.554	-9.94216	5.36308
_Iavcode_13		1.85523	3.140418	0.59	0.556	-4.380143	8.090603
_Iavcode_14		.3461588	3.89545	0.09	0.929	-7.388349	8.080666
_Iavcode_15		.8174565	3.453917	0.24	0.813	-6.040377	7.67529
_Iavcode_16		3.672727	3.524192	1.04	0.300	-3.324639	10.67009
_Iavcode_17		-9.98739	3.045812	-3.28	0.001	-16.03492	-3.939859
_Iavcode_18		-2.563636	4.56644	-0.56	0.576	-11.63041	6.503138
_Iavcode_19		1.127957	3.212146	0.35	0.726	-5.249834	7.505748
_Iavcode_20		-3.872043	3.932902	-0.98	0.327	-11.68091	3.936827
_Iavcode_21		-4.998661	3.072051	-1.63	0.107	-11.09829	1.100968
_Iavcode_22		-5.603605	3.449166	-1.62	0.108	-12.45201	1.244795
_cons		39.6868	2.868775	13.83	0.000	33.99078	45.38282

dir : seeout

```

i.avcode      _Iavcode_1-22      (naturally coded; _Iavcode_1 omitted)

```

```

Linear regression      Number of obs      =      1,033
                      F(21, 94)          =      8.35
                      Prob > F            =      0.0000
                      R-squared           =      0.0135
                      Root MSE          =      .49907

```

(Std. err. adjusted for 95 clusters in codevillage)

	hhhead	Coefficient	Robust std. err.	t	P> t	[95% conf. interval]	
abc		-.0073054	.0193998	-0.38	0.707	-.0458241	.0312133
_Iavcode_2		-.0450436	.055329	-0.81	0.418	-.1549006	.0648133
_Iavcode_3		.0295725	.0674244	0.44	0.662	-.1043002	.1634451
_Iavcode_4		.1156308	.0528021	2.19	0.031	.0107909	.2204706
_Iavcode_5		.006481	.0507431	0.13	0.899	-.0942706	.1072326
_Iavcode_6		.0901786	.0386553	2.33	0.022	.0134275	.1669296
_Iavcode_8		-.0007305	.049708	-0.01	0.988	-.099427	.0979659
_Iavcode_9		-.0904221	.0567853	-1.59	0.115	-.2031706	.0223265
_Iavcode_10		-.0396729	.0501699	-0.79	0.431	-.1392863	.0599405
_Iavcode_11		-.0461851	.0488742	-0.94	0.347	-.1432259	.0508558

```

_1avcode_12 | .0712662 .0423824 1.68 0.096 -.012885 .1554174
_1avcode_13 | -.0007305 .0769741 -0.01 0.992 -.1535645 .1521034
_1avcode_14 | -.0095175 .0772117 -0.12 0.902 -.1628232 .1437882
_1avcode_15 | .0647926 .0425397 1.52 0.131 -.019671 .1492561
_1avcode_16 | .0545455 .0561584 0.97 0.334 -.0569584 .1660493
_1avcode_17 | -.0216315 .0628755 -0.34 0.732 -.1464723 .1032094
_1avcode_18 | -.0084716 .0867555 -0.10 0.922 -.1807268 .1637835
_1avcode_19 | .1356331 .0522614 2.60 0.011 .0318669 .2393993
_1avcode_20 | -.0158821 .0408933 -0.39 0.699 -.0970766 .0653125
_1avcode_21 | -.0311443 .0513585 -0.61 0.546 -.1331177 .0708292
_1avcode_22 | -.1025524 .0745808 -1.38 0.172 -.2506342 .0455295
_cons | .5498378 .0406818 13.52 0.000 .4690632 .6306124

```

dir : seeout

i.avcode _1avcode_1-22 (naturally coded; _1avcode_1 omitted)

```

Linear regression      Number of obs   =      1,038
                      F(21, 94)           =      3599.44
                      Prob > F            =      0.0000
                      R-squared           =      0.4094
                      Root MSE         =      .34963

```

(Std. err. adjusted for 95 clusters in codevillage)

eth_hausa	Coefficient	Robust std. err.	t	P> t	[95% conf. interval]
abc	.012015	.0349363	0.34	0.732	-.0573518 .0813819
_1avcode_2	.5264717	.1623353	3.24	0.002	.2041512 .8487923
_1avcode_3	.5890803	.1602662	3.68	0.000	.270868 .9072926
_1avcode_4	.581846	.1605774	3.62	0.000	.2630158 .9006762
_1avcode_5	-.0452808	.1802514	-0.25	0.802	-.4031743 .3126126
_1avcode_6	-.3806167	.1580759	-2.41	0.018	-.6944801 -.0667533
_1avcode_8	.5512015	.1595115	3.46	0.001	.2344877 .8679153
_1avcode_9	.3143505	.1842892	1.71	0.091	-.0515599 .6802609
_1avcode_10	.3183555	.2018361	1.58	0.118	-.0823949 .7191059
_1avcode_11	-.2897076	.1580759	-1.83	0.070	-.603571 .0241558
_1avcode_12	.0933121	.1907411	0.49	0.626	-.2854088 .472033
_1avcode_13	.5739288	.1601635	3.58	0.001	.2559204 .8919371
_1avcode_14	.5931936	.1572318	3.77	0.000	.2810062 .905381
_1avcode_15	.6214676	.1599367	3.89	0.000	.3039095 .9390256
_1avcode_16	-.2	.1683518	-1.19	0.238	-.5342665 .1342665
_1avcode_17	.2300159	.2229219	1.03	0.305	-.2126007 .6726326
_1avcode_18	.4363636	.1710429	2.55	0.012	.096754 .7759732
_1avcode_19	.6193833	.1580759	3.92	0.000	.3055199 .9332467
_1avcode_20	.5284742	.1610056	3.28	0.001	.2087938 .8481546
_1avcode_21	.286232	.167034	1.71	0.090	-.0454179 .6178819
_1avcode_22	.6207183	.1592317	3.90	0.000	.3045601 .9368766
_cons	.3746092	.1640383	2.28	0.025	.0489072 .7003111

dir : seeout

i.avcode _1avcode_1-22 (naturally coded; _1avcode_1 omitted)

```

Linear regression      Number of obs   =      1,038
                      F(21, 94)           =      6.24
                      Prob > F            =      0.0000
                      R-squared           =      0.0717
                      Root MSE         =      3.9542

```

(Std. err. adjusted for 95 clusters in codevillage)

hhmem_no	Coefficient	Robust std. err.	t	P> t	[95% conf. interval]
----------	-------------	---------------------	---	------	----------------------

abc	.0217984	.2542599	0.09	0.932	-.4830407	.5266374
_Iavcode_2	.7076377	.7213953	0.98	0.329	-.7247095	2.139985
_Iavcode_3	1.044604	.7436202	1.40	0.163	-.4318712	2.521079
_Iavcode_4	1.819008	.9923548	1.83	0.070	-.1513356	3.789352
_Iavcode_5	.6997523	.7791797	0.90	0.371	-.8473273	2.246832
_Iavcode_6	-1.743275	1.218152	-1.43	0.156	-4.161944	.6753947
_Iavcode_8	-.9932747	.8007989	-1.24	0.218	-2.58328	.5967304
_Iavcode_9	-1.504484	.8015105	-1.88	0.064	-3.095901	.0869343
_Iavcode_10	.1846008	.7618476	0.24	0.809	-1.328066	1.697267
_Iavcode_11	-1.879638	1.080268	-1.74	0.085	-4.024536	.2652592
_Iavcode_12	-.5956403	.7598227	-0.78	0.435	-2.104286	.9130055
_Iavcode_13	1.30218	.7115621	1.83	0.070	-.1106434	2.715003
_Iavcode_14	1.025187	.8579753	1.19	0.235	-.6783433	2.728717
_Iavcode_15	.31431	.7001271	0.45	0.655	-1.075809	1.704429
_Iavcode_16	.7818182	.7357367	1.06	0.291	-.6790042	2.242641
_Iavcode_17	-.9078152	1.094914	-0.83	0.409	-3.081792	1.266161
_Iavcode_18	.6909091	.8648299	0.80	0.426	-1.026231	2.408049
_Iavcode_19	1.438543	1.162211	1.24	0.219	-.8690538	3.746141
_Iavcode_20	.3021798	.8553104	0.35	0.725	-1.396059	2.000419
_Iavcode_21	-.9702172	.7599721	-1.28	0.205	-2.47916	.5387252
_Iavcode_22	2.597531	.6693062	3.88	0.000	1.268608	3.926454
_cons	8.005103	.6280253	12.75	0.000	6.758144	9.252062

dir : seeout

i.avcode _Iavcode_1-22 (naturally coded; _Iavcode_1 omitted)

Linear regression	Number of obs	=	1,012
	F(21, 94)	=	84.61
	Prob > F	=	0.0000
	R-squared	=	0.1475
	Root MSE	=	.25437

(Std. err. adjusted for 95 clusters in codevillage)

edchild_pe-t	Coefficient	Robust std. err.	t	P> t	[95% conf. interval]	
abc	-.0002277	.0183422	-0.01	0.990	-.0366467	.0361912
_Iavcode_2	-.1451826	.0535493	-2.71	0.008	-.251506	-.0388592
_Iavcode_3	-.0184886	.0553946	-0.33	0.739	-.1284759	.0914986
_Iavcode_4	-.0881842	.0610644	-1.44	0.152	-.209429	.0330606
_Iavcode_5	-.1074316	.0672968	-1.60	0.114	-.241051	.0261878
_Iavcode_6	-.0364125	.0699725	-0.52	0.604	-.1753445	.1025196
_Iavcode_8	-.2763289	.0570313	-4.85	0.000	-.3895658	-.163092
_Iavcode_9	-.0542404	.0500933	-1.08	0.282	-.1537018	.0452209
_Iavcode_10	-.0605815	.0612924	-0.99	0.325	-.182279	.061116
_Iavcode_11	-.3597951	.0461299	-7.80	0.000	-.4513871	-.2682031
_Iavcode_12	.0409793	.0696756	0.59	0.558	-.0973634	.1793219
_Iavcode_13	.1294367	.072971	1.77	0.079	-.0154488	.2743222
_Iavcode_14	-.1426885	.0561694	-2.54	0.013	-.2542142	-.0311627
_Iavcode_15	.0657517	.0679865	0.97	0.336	-.0692371	.2007404
_Iavcode_16	-.0373254	.0732813	-0.51	0.612	-.1828273	.1081764
_Iavcode_17	-.1196478	.0502886	-2.38	0.019	-.2194969	-.0197986
_Iavcode_18	-.1195123	.0571305	-2.09	0.039	-.2329461	-.0060784
_Iavcode_19	-.0947199	.0495246	-1.91	0.059	-.1930521	.0036123
_Iavcode_20	-.1791428	.0510777	-3.51	0.001	-.2805588	-.0777268
_Iavcode_21	-.2711462	.0567213	-4.78	0.000	-.3837676	-.1585247
_Iavcode_22	-.0505331	.0492786	-1.03	0.308	-.148377	.0473108
_cons	.359903	.0472928	7.61	0.000	.266002	.4538039

dir : seeout

i.avcode _Iavcode_1-22 (naturally coded; _Iavcode_1 omitted)

```

Linear regression                                Number of obs   =      1,038
                                                F(21, 94)      =      13.20
                                                Prob > F       =      0.0000
                                                R-squared     =      0.0598
                                                Root MSE     =      1.5588

```

(Std. err. adjusted for 95 clusters in codevillage)

assets	Coefficient	Robust std. err.	t	P> t	[95% conf. interval]	
abc	-.0341962	.0967777	-0.35	0.725	-.2263507	.1579582
_Iavcode_2	.7840979	.2301153	3.41	0.001	.3271986	1.240997
_Iavcode_3	.5208228	.2181326	2.39	0.019	.0877154	.9539302
_Iavcode_4	.3981457	.2111144	1.89	0.062	-.021027	.8173184
_Iavcode_5	.0302749	.3147766	0.10	0.924	-.5947214	.6552713
_Iavcode_6	-.3579651	.1656677	-2.16	0.033	-.6869022	-.029028
_Iavcode_8	.0056713	.2514413	0.02	0.982	-.4935713	.5049139
_Iavcode_9	.2083404	.2814255	0.74	0.461	-.3504366	.7671173
_Iavcode_10	.5151234	.2864328	1.80	0.075	-.0535956	1.083842
_Iavcode_11	.6420349	.1810084	3.55	0.001	.2826385	1.001431
_Iavcode_12	.2113426	.2275849	0.93	0.355	-.2405325	.6632177
_Iavcode_13	.6193076	.3090489	2.00	0.048	.0056838	1.232931
_Iavcode_14	1.169413	.4262613	2.74	0.007	.3230608	2.015764
_Iavcode_15	.1342476	.2340053	0.57	0.568	-.3303753	.5988706
_Iavcode_16	.5454545	.2317108	2.35	0.021	.0853874	1.005522
_Iavcode_17	.2642203	.2356443	1.12	0.265	-.2036569	.7320975
_Iavcode_18	-.1636364	.355084	-0.46	0.646	-.868664	.5413913
_Iavcode_19	-.2216014	.2955759	-0.75	0.455	-.8084743	.3652714
_Iavcode_20	.263247	.2730072	0.96	0.337	-.2788151	.8053092
_Iavcode_21	-.2978771	.2040605	-1.46	0.148	-.7030441	.1072898
_Iavcode_22	1.079313	.1999392	5.40	0.000	.6823287	1.476297
_cons	4.693245	.1698453	27.63	0.000	4.356013	5.030477

dir : seeout

i.avcode _Iavcode_1-22 (naturally coded; _Iavcode_1 omitted)

```

Linear regression                                Number of obs   =      1,038
                                                F(21, 94)      =      10.57
                                                Prob > F       =      0.0000
                                                R-squared     =      0.0755
                                                Root MSE     =      .47231

```

(Std. err. adjusted for 95 clusters in codevillage)

drought	Coefficient	Robust std. err.	t	P> t	[95% conf. interval]	
abc	-.029972	.0347727	-0.86	0.391	-.099014	.0390701
_Iavcode_2	-.2646685	.0641818	-4.12	0.000	-.392103	-.1372341
_Iavcode_3	-.2848154	.087751	-3.25	0.002	-.459047	-.1105838
_Iavcode_4	-.2579834	.0671993	-3.84	0.000	-.3914092	-.1245576
_Iavcode_5	-.0322349	.0628955	-0.51	0.609	-.1571153	.0926454
_Iavcode_6	-.0120881	.103007	-0.12	0.907	-.2166108	.1924346
_Iavcode_8	-.0575427	.0833676	-0.69	0.492	-.2230709	.1079856
_Iavcode_9	-.1131534	.2535495	-0.45	0.656	-.6165818	.390275
_Iavcode_10	-.1989016	.0753997	-2.64	0.010	-.3486094	-.0491938
_Iavcode_11	-.1029972	.0699717	-1.47	0.144	-.2419277	.0359333
_Iavcode_12	-.2059944	.1004607	-2.05	0.043	-.4054614	-.0065274
_Iavcode_13	-.3529972	.0757173	-4.66	0.000	-.5033357	-.2026587
_Iavcode_14	-.1094205	.159738	-0.68	0.495	-.4265841	.2077431
_Iavcode_15	-.1295322	.0946992	-1.37	0.175	-.3175596	.0584952

```

_Iavcode_16 | -1.10e-14   .087092   -0.00   1.000   -.1729232   .1729232
_Iavcode_17 | .0635867   .1158494    0.55   0.584   -.1664351   .2936085
_Iavcode_18 | .0545455   .0656953    0.83   0.408   -.0758942   .1849851
_Iavcode_19 | -.3757245   .0590824   -6.36   0.000   -.4930339   -.258415
_Iavcode_20 | .0333664   .1117675    0.30   0.766   -.1885505   .2552834
_Iavcode_21 | -.0882998   .0768295   -1.15   0.253   -.2408466   .064247
_Iavcode_22 | -.3487517   .0878121   -3.97   0.000   -.5231047   -.1743986
_cons       | .5270741   .0588432    8.96   0.000   .4102396   .6439086

```

dir : seeout

i.avcode _Iavcode_1-22 (naturally coded; _Iavcode_1 omitted)

```

Linear regression                               Number of obs   =      1,035
                                                F(21, 94)      =      19.21
                                                Prob > F       =      0.0000
                                                R-squared      =      0.0991
                                                Root MSE     =      .43782

```

(Std. err. adjusted for 95 clusters in codevillage)

cellphone	Coefficient	Robust std. err.	t	P> t	[95% conf. interval]
abc	-.0037592	.0266485	-0.14	0.888	-.0566704 .049152
_Iavcode_2	-.0724767	.1144164	-0.63	0.528	-.2996532 .1546999
_Iavcode_3	-.1034062	.1207499	-0.86	0.394	-.343158 .1363455
_Iavcode_4	.1025983	.114247	0.90	0.371	-.1242418 .3294384
_Iavcode_5	.0171794	.1264084	0.14	0.892	-.2338075 .2681662
_Iavcode_6	-.3003759	.1102424	-2.72	0.008	-.5192648 -.081487
_Iavcode_8	-.2549214	.1100382	-2.32	0.023	-.4734048 -.0364379
_Iavcode_9	-.1330827	.1518101	-0.88	0.383	-.4345052 .1683397
_Iavcode_10	.0020278	.1164196	0.02	0.986	-.229126 .2331817
_Iavcode_11	-.0731032	.1048788	-0.70	0.488	-.2813425 .1351361
_Iavcode_12	-.0916609	.1148137	-0.80	0.427	-.3196262 .1363044
_Iavcode_13	.1425853	.1068138	1.33	0.185	-.069496 .3546667
_Iavcode_14	.2980112	.1130654	2.64	0.010	.0735173 .5225052
_Iavcode_15	.0004562	.1169839	0.00	0.997	-.2318181 .2327305
_Iavcode_16	.024888	.1215585	0.20	0.838	-.2164692 .2662452
_Iavcode_17	.0187457	.1206435	0.16	0.877	-.2207948 .2582862
_Iavcode_18	-.2181818	.1332133	-1.64	0.105	-.48268 .0463163
_Iavcode_19	-.2549214	.1228253	-2.08	0.041	-.4987939 -.0110488
_Iavcode_20	-.2094668	.1107489	-1.89	0.062	-.4293614 .0104278
_Iavcode_21	-.2549783	.108673	-2.35	0.021	-.4707512 -.0392055
_Iavcode_22	.0796778	.1092635	0.73	0.468	-.1372675 .296623
_cons	.3477101	.10299	3.38	0.001	.1432211 .5521991

dir : seeout

i.avcode _Iavcode_1-22 (naturally coded; _Iavcode_1 omitted)

```

Linear regression                               Number of obs   =      1,038
                                                F(21, 94)      =      17.35
                                                Prob > F       =      0.0000
                                                R-squared      =      0.2022
                                                Root MSE     =      .37378

```

(Std. err. adjusted for 95 clusters in codevillage)

accesscell~e	Coefficient	Robust std. err.	t	P> t	[95% conf. interval]
abc	.0427679	.0230579	1.85	0.067	-.0030141 .08855
_Iavcode_2	-.0937603	.0684315	-1.37	0.174	-.2296327 .0421121
_Iavcode_3	-.0260262	.0819988	-0.32	0.752	-.1888367 .1367843

_Iavcode_4	.0215526	.0690124	0.31	0.756	-.1154732	.1585785
_Iavcode_5	.0417078	.0738344	0.56	0.573	-.1048922	.1883078
_Iavcode_6	-.2684505	.1046788	-2.56	0.012	-.4762926	-.0606084
_Iavcode_8	-.4502687	.0997885	-4.51	0.000	-.648401	-.2521363
_Iavcode_9	-.0937603	.0754084	-1.24	0.217	-.2434854	.0559648
_Iavcode_10	-.0643528	.070542	-0.91	0.364	-.2044156	.07571
_Iavcode_11	-.1320868	.0689408	-1.92	0.058	-.2689704	.0047967
_Iavcode_12	-.136901	.0991779	-1.38	0.171	-.3338211	.0600192
_Iavcode_13	.0270041	.0793867	0.34	0.734	-.13062	.1846281
_Iavcode_14	-.0082807	.0793938	-0.10	0.917	-.165919	.1493576
_Iavcode_15	-.0810687	.0837648	-0.97	0.336	-.2473855	.0852482
_Iavcode_16	.0545455	.0702781	0.78	0.440	-.0849934	.1940843
_Iavcode_17	-.0973243	.0972539	-1.00	0.320	-.2904241	.0957755
_Iavcode_18	-.3636364	.0953282	-3.81	0.000	-.5529127	-.17436
_Iavcode_19	.0042768	.0833491	0.05	0.959	-.1612148	.1697683
_Iavcode_20	-.4654202	.105171	-4.43	0.000	-.6742396	-.2566007
_Iavcode_21	-.4950752	.0736541	-6.72	0.000	-.6413172	-.3488332
_Iavcode_22	.0443823	.0770661	0.58	0.566	-.1086343	.1973989
_cons	.8834301	.0660787	13.37	0.000	.7522293	1.014631

dir : seeout

i.avcode _Iavcode_1-22 (naturally coded; _Iavcode_1 omitted)

Linear regression	Number of obs	=	1,026
	F(21, 94)	=	8.01
	Prob > F	=	0.0000
	R-squared	=	0.1225
	Root MSE	=	.47035

(Std. err. adjusted for 95 clusters in codevillage)

usecellphone	Coefficient	Robust std. err.	t	P> t	[95% conf. interval]
abc	.0359607	.0320567	1.12	0.265	-.0276886 .09961
_Iavcode_2	.0116262	.107133	0.11	0.914	-.2010888 .2243412
_Iavcode_3	-.1388282	.1137638	-1.22	0.225	-.3647089 .0870526
_Iavcode_4	.0387632	.1106069	0.35	0.727	-.1808494 .2583758
_Iavcode_5	.094438	.1196203	0.79	0.432	-.1430709 .3319469
_Iavcode_6	-.1691312	.1518595	-1.11	0.268	-.4706519 .1323895
_Iavcode_8	-.3431317	.1394144	-2.46	0.016	-.6199423 -.0663211
_Iavcode_9	-.1122501	.1187139	-0.95	0.347	-.3479594 .1234592
_Iavcode_10	-.0541373	.1154178	-0.47	0.640	-.283302 .1750274
_Iavcode_11	-.1920845	.12624	-1.52	0.131	-.4427371 .058568
_Iavcode_12	-.1200806	.125604	-0.96	0.342	-.3694702 .129309
_Iavcode_13	.012687	.1125906	0.11	0.911	-.2108642 .2362382
_Iavcode_14	.1127854	.1264301	0.89	0.375	-.1382445 .3638152
_Iavcode_15	-.0381378	.1555215	-0.25	0.807	-.3469293 .2706538
_Iavcode_16	.0727273	.1129843	0.64	0.521	-.1516056 .2970602
_Iavcode_17	-.0872123	.1459424	-0.60	0.552	-.3769844 .2025598
_Iavcode_18	-.4	.1216121	-3.29	0.001	-.6414636 -.1585364
_Iavcode_19	-.2600403	.1341706	-1.94	0.056	-.5264393 .0063587
_Iavcode_20	-.4115554	.116909	-3.52	0.001	-.6436809 -.17943
_Iavcode_21	-.4235243	.1223031	-3.46	0.001	-.66636 -.1806887
_Iavcode_22	-.0355059	.1241616	-0.29	0.776	-.2820318 .2110199
_cons	.6511509	.105546	6.17	0.000	.4415869 .8607149

dir : seeout

i.avcode _Iavcode_1-22 (naturally coded; _Iavcode_1 omitted)

Linear regression	Number of obs	=	570
	F(21, 92)	=	19.68
	Prob > F	=	0.0000

R-squared = 0.0636
Root MSE = .44838

(Std. err. adjusted for 93 clusters in codevillage)

makecall	Coefficient	Robust std. err.	t	P> t	[95% conf. interval]	
abc	.0308199	.0391302	0.79	0.433	-.0468962	.1085359
_Iavcode_2	.0943634	.1163854	0.81	0.420	-.1367881	.3255148
_Iavcode_3	.2107526	.0964992	2.18	0.032	.0190969	.4024083
_Iavcode_4	.166125	.1025244	1.62	0.109	-.0374974	.3697473
_Iavcode_5	.0327873	.1075782	0.30	0.761	-.1808722	.2464468
_Iavcode_6	-.3049212	.1045443	-2.92	0.004	-.5125551	-.0972873
_Iavcode_8	.2558111	.10183	2.51	0.014	.0535679	.4580544
_Iavcode_9	.0998809	.0897385	1.11	0.269	-.0783475	.2781092
_Iavcode_10	.0238938	.119029	0.20	0.841	-.212508	.2602956
_Iavcode_11	-.0758423	.1270776	-0.60	0.552	-.3282294	.1765448
_Iavcode_12	-.1019843	.1232906	-0.83	0.410	-.3468501	.1428814
_Iavcode_13	-.0414816	.0980342	-0.42	0.673	-.236186	.1532228
_Iavcode_14	.0258703	.1262815	0.20	0.838	-.2249356	.2766763
_Iavcode_15	.0708463	.1069076	0.66	0.509	-.1414814	.2831741
_Iavcode_16	-.0183581	.0953462	-0.19	0.848	-.2077238	.1710077
_Iavcode_17	-.1053202	.1014232	-1.04	0.302	-.3067555	.096115
_Iavcode_18	.3179938	.0796043	3.99	0.000	.1598927	.4760948
_Iavcode_19	-.0112303	.1713417	-0.07	0.948	-.3515296	.3290691
_Iavcode_20	.0070348	.1430832	0.05	0.961	-.2771409	.2912104
_Iavcode_21	-.0991303	.2277214	-0.44	0.664	-.5514046	.353144
_Iavcode_22	-.0238885	.12316	-0.19	0.847	-.2684948	.2207178
_cons	.6573504	.0908152	7.24	0.000	.4769835	.8377172

dir : seeout

i.avcode _Iavcode_1-22 (naturally coded; _Iavcode_1 omitted)

Linear regression

Number of obs = 570
F(21, 92) = 4.36
Prob > F = 0.0000
R-squared = 0.0802
Root MSE = .33617

(Std. err. adjusted for 93 clusters in codevillage)

receivecall	Coefficient	Robust std. err.	t	P> t	[95% conf. interval]	
abc	.0289937	.0314504	0.92	0.359	-.0334695	.0914569
_Iavcode_2	-.1941751	.0692003	-2.81	0.006	-.3316129	-.0567374
_Iavcode_3	-.1468187	.0992381	-1.48	0.142	-.3439142	.0502768
_Iavcode_4	.0316505	.0467408	0.68	0.500	-.0611808	.1244818
_Iavcode_5	.0090426	.052232	0.17	0.863	-.0946947	.1127799
_Iavcode_6	-.0031317	.1021867	-0.03	0.976	-.2060834	.19982
_Iavcode_8	-.3447477	.084294	-4.09	0.000	-.5121628	-.1773326
_Iavcode_9	-.0876752	.0420481	-2.09	0.040	-.1711864	-.004164
_Iavcode_10	-.0915746	.1243228	-0.74	0.463	-.3384905	.1553413
_Iavcode_11	-.0190756	.0863518	-0.22	0.826	-.1905777	.1524265
_Iavcode_12	-.0456438	.0612364	-0.75	0.458	-.1672645	.075977
_Iavcode_13	.0485575	.0510706	0.95	0.344	-.0528732	.1499882
_Iavcode_14	-.0406454	.0886599	-0.46	0.648	-.2167317	.1354409
_Iavcode_15	-.039845	.0672526	-0.59	0.555	-.1734144	.0937243
_Iavcode_16	.0555441	.044911	1.24	0.219	-.033653	.1447411
_Iavcode_17	-.040482	.0813143	-0.50	0.620	-.2019792	.1210152
_Iavcode_18	-.3248744	.0828075	-3.92	0.000	-.4893373	-.1604115
_Iavcode_19	-.1432308	.1231919	-1.16	0.248	-.3879004	.1014389

```

 _Iavcode_20 | -.2359247 .1512202 -1.56 0.122 -.5362611 .0644117
 _Iavcode_21 | -.128391 .1041029 -1.23 0.221 -.3351483 .0783663
 _Iavcode_22 | -.0027061 .068988 -0.04 0.969 -.1397222 .1343101
    _cons | .9016794 .0447759 20.14 0.000 .8127506 .9906083
-----

```

```
dir : seeout
```

```
.
. use "ABCtestscore.dta", clear
```

```
.
. bys codev: keep if _n==1
(23,797 observations deleted)
```

```
. keep codev
```

```
. merge 1:m codev using "ABCteacher.dta"
```

Result	Number of obs
Not matched	24
from master	0 (_merge==1)
from using	24 (_merge==2)
Matched	346 (_merge==3)

```
.
. // note that during our operation, we have dropped some of the codes that are
> not contained in the test score result.
. // because these are not relevant to our study.
. tab _m
```

Matching result from		Freq.	Percent	Cum.
merge				
Using only (2)		24	6.49	6.49
Matched (3)		346	93.51	100.00
Total		370	100.00	

```
. drop if _m==2
(24 observations deleted)
```

```
.
. tabstat levelno teacherage femaleteacher local, by(abc) stat(mean sd) nototal
> long col(stat)
```

abc	Variable	Mean	SD
0	levelno	8.323171	2.083932
	teacherage	33.05521	9.157909
	femateac~r	.3173653	.4668508
	local	.7573964	.4299312
1	levelno	8.572254	1.77899
	teacherage	32.71098	8.067142
	femateac~r	.3678161	.4836026
	local	.6818182	.4670994

```
.
. outreg2 using Table1_PanelB_mean_std.dta, replace
dir : seeout
```



```

. foreach i in levelno teacherage femaleteacher local{
2.      xi: reg `i' abc i.avcode, robust cluster(codev)
3.      outreg2 abc using "Table1_PanelB", dec(2) append dta ctitle ("`var'
> ") nocons
4.      }
i.avcode      _Iavcode_1-24      (naturally coded; _Iavcode_1 omitted)

```

```

Linear regression      Number of obs      =      337
                      F(23, 112)          =      5.53
                      Prob > F              =      0.0000
                      R-squared             =      0.1854
                      Root MSE           =      1.809

```

(Std. err. adjusted for 113 clusters in codevillage)

levelno	Coefficient	Robust std. err.	t	P> t	[95% conf. interval]	
abc	.0802486	.2163942	0.37	0.711	-.3485088	.5090059
_Iavcode_2	.7766383	.4873943	1.59	0.114	-.1890711	1.742348
_Iavcode_3	-.0997675	.4987741	-0.20	0.842	-1.088024	.8884894
_Iavcode_4	-1.458649	.5547038	-2.63	0.010	-2.557724	-.3595749
_Iavcode_5	-1.544212	.5694835	-2.71	0.008	-2.67257	-.4158533
_Iavcode_6	.6046218	.388493	1.56	0.122	-.1651274	1.374371
_Iavcode_8	-.6453782	.7568115	-0.85	0.396	-2.144903	.8541466
_Iavcode_9	-.4233617	.5080666	-0.83	0.406	-1.430031	.5833072
_Iavcode_10	-1.570275	.6159605	-2.55	0.012	-2.790721	-.3498279
_Iavcode_11	.4379551	.4186403	1.05	0.298	-.391527	1.267437
_Iavcode_12	.1260214	.4695053	0.27	0.789	-.8042432	1.056286
_Iavcode_13	-1.022576	.5759544	-1.78	0.079	-2.163756	.1186042
_Iavcode_14	-.7287116	.7102468	-1.03	0.307	-2.135975	.6785514
_Iavcode_15	-1.266434	.7836363	-1.62	0.109	-2.819109	.2862407
_Iavcode_16	-1.551345	.7007669	-2.21	0.029	-2.939825	-.1628652
_Iavcode_17	-.4153933	.4462345	-0.93	0.354	-1.29955	.4687631
_Iavcode_18	-.2878679	.5382422	-0.53	0.594	-1.354326	.77859
_Iavcode_19	-1.951962	.8113422	-2.41	0.018	-3.559533	-.3443914
_Iavcode_20	-.1642395	.5176675	-0.32	0.752	-1.189931	.8614523
_Iavcode_21	.2335659	.4171043	0.56	0.577	-.5928729	1.060005
_Iavcode_22	-2.273979	.8728006	-2.61	0.010	-4.003321	-.544636
_Iavcode_23	-1.860399	.8612325	-2.16	0.033	-3.566821	-.1539772
_Iavcode_24	.0246321	.5246059	0.05	0.963	-1.014807	1.064072
_cons	9.175213	.3998824	22.94	0.000	8.382897	9.967528

dir : seeout

```

i.avcode      _Iavcode_1-24      (naturally coded; _Iavcode_1 omitted)

```

```

Linear regression      Number of obs      =      336
                      F(23, 112)          =      5.52
                      Prob > F              =      0.0000
                      R-squared             =      0.1531
                      Root MSE           =      8.2031

```

(Std. err. adjusted for 113 clusters in codevillage)

teacherage	Coefficient	Robust std. err.	t	P> t	[95% conf. interval]	
abc	-.3090361	1.184916	-0.26	0.795	-2.656794	2.038722
_Iavcode_2	1.017627	6.510191	0.16	0.876	-11.88148	13.91674
_Iavcode_3	-1.008223	6.259481	-0.16	0.872	-13.41058	11.39414
_Iavcode_4	.0109708	6.062758	0.00	0.999	-12.00161	12.02355

_Iavcode_5	-4.119334	5.6608	-0.73	0.468	-15.33548	7.096816
_Iavcode_6	-5.995103	5.624389	-1.07	0.289	-17.13911	5.148903
_Iavcode_8	.6715632	6.027858	0.11	0.911	-11.27186	12.61499
_Iavcode_9	-2.682373	6.325358	-0.42	0.672	-15.21526	9.850514
_Iavcode_10	3.896965	5.946039	0.66	0.514	-7.884349	15.67828
_Iavcode_11	-6.995103	5.735281	-1.22	0.225	-18.35883	4.36862
_Iavcode_12	-.9108465	6.222668	-0.15	0.884	-13.24027	11.41857
_Iavcode_13	-2.209963	6.810797	-0.32	0.746	-15.70469	11.28476
_Iavcode_14	.6715632	6.110963	0.11	0.913	-11.43653	12.77965
_Iavcode_15	-2.008223	6.271264	-0.32	0.749	-14.43393	10.41748
_Iavcode_16	-5.069642	5.783922	-0.88	0.383	-16.52974	6.390459
_Iavcode_17	4.947868	6.151285	0.80	0.423	-7.240114	17.13585
_Iavcode_18	-2.612147	6.11147	-0.43	0.670	-14.72124	9.496947
_Iavcode_19	-4.681449	5.756291	-0.81	0.418	-16.0868	6.723904
_Iavcode_20	-5.41833	5.762586	-0.94	0.349	-16.83615	5.999495
_Iavcode_21	-7.222365	5.902732	-1.22	0.224	-18.91787	4.473142
_Iavcode_22	5.95582	7.191021	0.83	0.409	-8.292265	20.20391
_Iavcode_23	-.8235171	6.247559	-0.13	0.895	-13.20225	11.55522
_Iavcode_24	1.450353	5.718558	0.25	0.800	-9.880236	12.78094
_cons	34.36779	5.620765	6.11	0.000	23.23097	45.50462

dir : seeout

i.avcode _Iavcode_1-24 (naturally coded; _Iavcode_1 omitted)

Linear regression

Number of obs = 341
F(23, 112) = 27.91
Prob > F = 0.0000
R-squared = 0.0844
Root MSE = .47115

(Std. err. adjusted for 113 clusters in codevillage)

femateac-r	Coefficient	Robust std. err.	t	P> t	[95% conf. interval]	
abc	.0604638	.0434274	1.39	0.167	-.025582	.1465095
_Iavcode_2	.2354816	.0738566	3.19	0.002	.0891442	.3818189
_Iavcode_3	.1671093	.1089034	1.53	0.128	-.0486689	.3828875
_Iavcode_4	.2382333	.1091432	2.18	0.031	.0219801	.4544865
_Iavcode_5	.2782204	.1260676	2.21	0.029	.0284336	.5280072
_Iavcode_6	.4314507	.0591226	7.30	0.000	.3143068	.5485945
_Iavcode_8	.264784	.1688384	1.57	0.120	-.0697477	.5993156
_Iavcode_9	.2354816	.0738566	3.19	0.002	.0891442	.3818189
_Iavcode_10	.3941439	.1489835	2.65	0.009	.0989523	.6893355
_Iavcode_11	.5981173	.0833069	7.18	0.000	.4330553	.7631793
_Iavcode_12	.3865859	.1112895	3.47	0.001	.1660801	.6070918
_Iavcode_13	.4043185	.0724673	5.58	0.000	.2607338	.5479032
_Iavcode_14	-.0685493	.0572327	-1.20	0.234	-.1819485	.0448499
_Iavcode_15	.3337759	.143568	2.32	0.022	.0493144	.6182375
_Iavcode_16	.1395125	.1490788	0.94	0.351	-.155868	.434893
_Iavcode_17	.514784	.0984471	5.23	0.000	.3197236	.7098444
_Iavcode_18	.43397	.0984395	4.41	0.000	.2389247	.6290153
_Iavcode_19	.2849386	.1707857	1.67	0.098	-.0534515	.6233286
_Iavcode_20	.3270577	.0886265	3.69	0.000	.1514556	.5026599
_Iavcode_21	.3337759	.1069981	3.12	0.002	.121773	.5457789
_Iavcode_22	.1365859	.1188467	1.15	0.253	-.0988936	.3720654
_Iavcode_23	.363912	.0874067	4.16	0.000	.1907268	.5370972
_Iavcode_24	.24647	.1370623	1.80	0.075	-.0251014	.5180414
_cons	.0282402	.0621356	0.45	0.650	-.0948735	.1513538

dir : seeout

i.avcode _Iavcode_1-24 (naturally coded; _Iavcode_1 omitted)

```

Linear regression                                Number of obs   =       345
                                                F(23, 112)      =    1313.50
                                                Prob > F         =     0.0000
                                                R-squared        =     0.4900
                                                Root MSE        =     .33285

```

(Std. err. adjusted for 113 clusters in codevillage)

local	Coefficient	Robust std. err.	t	P> t	[95% conf. interval]	
abc	-.02373	.0509235	-0.47	0.642	-.1246283	.0771684
_Iavcode_2	-.2910595	.2874665	-1.01	0.313	-.8606375	.2785185
_Iavcode_3	.3052492	.1911376	1.60	0.113	-.0734655	.6839638
_Iavcode_4	.30459	.191271	1.59	0.114	-.074389	.683569
_Iavcode_5	.3052492	.1911434	1.60	0.113	-.0734769	.6839753
_Iavcode_6	-.6894775	.1904403	-3.62	0.000	-1.06681	-.3121445
_Iavcode_8	-.1894775	.2571869	-0.74	0.463	-.6990604	.3201054
_Iavcode_9	-.3910595	.3061824	-1.28	0.204	-.9977208	.2156018
_Iavcode_10	-.074365	.2836363	-0.26	0.794	-.636354	.487624
_Iavcode_11	-.6894775	.1904403	-3.62	0.000	-1.06681	-.3121445
_Iavcode_12	-.1963987	.2660542	-0.74	0.462	-.7235511	.3307536
_Iavcode_13	.2085044	.2106028	0.99	0.324	-.2087779	.6257868
_Iavcode_14	.3105225	.1903514	1.63	0.106	-.0666343	.6876793
_Iavcode_15	.3052492	.1911376	1.60	0.113	-.0734655	.6839638
_Iavcode_16	.3065675	.1908938	1.61	0.111	-.0716642	.6847992
_Iavcode_17	-.3561442	.2369494	-1.50	0.136	-.8256291	.1133407
_Iavcode_18	-.3154662	.2682648	-1.18	0.242	-.8469986	.2160661
_Iavcode_19	.3014825	.192128	1.57	0.119	-.0791944	.6821594
_Iavcode_20	-.2476697	.2437167	-1.02	0.312	-.7305631	.2352237
_Iavcode_21	-.5280842	.2270513	-2.33	0.022	-.9779572	-.0782111
_Iavcode_22	.3036013	.191523	1.59	0.116	-.075877	.6830795
_Iavcode_23	.1875	.2174885	0.86	0.390	-.2434256	.6184256
_Iavcode_24	.3095338	.1904579	1.63	0.107	-.0678342	.6869017
_cons	.7052975	.1946061	3.62	0.000	.3197104	1.090885

dir : seeout

```

.
. use "ABCtestscore.dta", clear
.
. tabstat writez1 mathz1, by(abc) stat(mean sd) nototal long col(stat)

```

abc	Variable	Mean	SD
0	writez1	-1.03e-08	.9998296
	mathz1	-6.69e-09	.9998296
1	writez1	-.026852	.8858414
	mathz1	-.0712108	.8159666

```

. outreg2 using Table1_PanelC_mean_std.dta, replace
dir : seeout

```

```

.
.
. foreach i of varlist writez1 mathz1 {
2.     xi: reg `i' abc i.avc, cluster(codev)
3.     outreg2 abc using "Table1_PanelC", dec(2) append dta ctitle("`var'
> ") nocons
4.     }

```

Linear regression	Number of obs	=	5,982
	F(23, 112)	=	4.22
	Prob > F	=	0.0000
	R-squared	=	0.0224
	Root MSE	=	.9347

	writez1	Coefficient	Robust std. err.	t	P> t	[95% conf. interval]
abc		-.0230921	.0399616	-0.58	0.565	-.1022709 .0560867
_Iavcode_2		-.2052144	.1216767	-1.69	0.094	-.4463011 .0358723
_Iavcode_3		-.3711898	.0773765	-4.80	0.000	-.5245013 -.2178782
_Iavcode_4		-.3032091	.0811349	-3.74	0.000	-.4639674 -.1424508
_Iavcode_5		-.2361261	.0929439	-2.54	0.012	-.4202826 -.0519696
_Iavcode_6		-.3646186	.0790297	-4.61	0.000	-.5212059 -.2080313
_Iavcode_8		-.3464581	.083205	-4.16	0.000	-.5113182 -.181598
_Iavcode_9		-.2341432	.111874	-2.09	0.039	-.4558072 -.0124791
_Iavcode_10		-.0489395	.2207886	-0.22	0.825	-.4864039 .3885248
_Iavcode_11		-.3634914	.0869115	-4.18	0.000	-.5356955 -.1912874
_Iavcode_12		-.27556	.0900153	-3.06	0.003	-.4539138 -.0972062
_Iavcode_13		-.3252861	.0807738	-4.03	0.000	-.485329 -.1652432
_Iavcode_14		-.2848496	.0958569	-2.97	0.004	-.4747777 -.0949214
_Iavcode_15		-.1754577	.1762696	-1.00	0.322	-.5247133 .1737979
_Iavcode_16		.1108725	.1750943	0.63	0.528	-.2360545 .4577995
_Iavcode_17		-.3840173	.0773277	-4.97	0.000	-.5372323 -.2308023
_Iavcode_18		-.0624857	.1315787	-0.47	0.636	-.3231921 .1982207
_Iavcode_19		-.3935956	.0776814	-5.07	0.000	-.5475114 -.2396798
_Iavcode_20		-.3272519	.08237	-3.97	0.000	-.4904574 -.1640463
_Iavcode_21		-.3633844	.0784376	-4.63	0.000	-.5187985 -.2079702
_Iavcode_22		-.1000956	.1718358	-0.58	0.561	-.4405661 .240375
_Iavcode_23		-.3799316	.0744152	-5.11	0.000	-.5273757 -.2324874
_Iavcode_24		-.3851199	.0748474	-5.15	0.000	-.5334204 -.2368195
_cons		.2450349	.0808129	3.03	0.003	.0849145 .4051553

Linear regression	Number of obs	=	5,982
	F(23, 112)	=	8.16
	Prob > F	=	0.0000
	R-squared	=	0.0199
	Root MSE	=	.90412

	Coefficient	Robust std. err.	t	P> t	[95% conf. interval]	
abc	-.0593326	.0468961	-1.27	0.208	-.1522512	.033586
_Iavcode_2	.0625439	.0924042	0.68	0.500	-.1205432	.245631
_Iavcode_3	-.0176523	.1308971	-0.13	0.893	-.2770082	.2417035
_Iavcode_4	-.0692193	.1275946	-0.54	0.589	-.3220315	.183593
_Iavcode_5	-.1202344	.0840566	-1.43	0.155	-.2867818	.046313
_Iavcode_6	-.2029252	.0670745	-3.03	0.003	-.3358247	-.0700256
_Iavcode_8	-.186536	.0744624	-2.51	0.014	-.3340736	-.0389983
_Iavcode_9	-.0735696	.1021616	-0.72	0.473	-.2759897	.1288505
_Iavcode_10	.1028629	.1989149	0.52	0.606	-.2912615	.4969873
_Iavcode_11	-.2015216	.0855893	-2.35	0.020	-.3711059	-.0319373
_Iavcode_12	-.1222683	.0767666	-1.59	0.114	-.2743715	.029835

```

_1avcode_13 | -.0344487 .1303188 -0.26 0.792 -.2926587 .2237613
_1avcode_14 | -.2170937 .0755794 -2.87 0.005 -.3668447 -.0673428
_1avcode_15 | .0899308 .2432233 0.37 0.712 -.3919851 .5718466
_1avcode_16 | .080392 .1371445 0.59 0.559 -.1913423 .3521263
_1avcode_17 | -.211454 .0705392 -3.00 0.003 -.3512185 -.0716895
_1avcode_18 | .1173407 .1053573 1.11 0.268 -.0914114 .3260927
_1avcode_19 | -.2039475 .1308492 -1.56 0.122 -.4632085 .0553135
_1avcode_20 | -.1537888 .0782359 -1.97 0.052 -.3088033 .0012257
_1avcode_21 | -.2009937 .0712221 -2.82 0.006 -.3421111 -.0598763
_1avcode_22 | -.0865498 .1337841 -0.65 0.519 -.3516259 .1785262
_1avcode_23 | -.277167 .0664611 -4.17 0.000 -.4088512 -.1454829
_1avcode_24 | -.2904979 .0670077 -4.34 0.000 -.4232651 -.1577307
_cons | .0819325 .073604 1.11 0.268 -.0639045 .2277694
-----

```

```
dir : seeout
```

```

.
. // now run the python code in jupyter notebook to generate the latex table in
> paper.
.
. /*****TABLE 3 *****/
. /* Difference-In-Difference Estimation*/
.
. use "ABCtestscore.dta", clear

.
. keep if round==1|round==2|round==4
(8,848 observations deleted)

.
. regress writescor abc post abcpst i.avc, robust cluster(codev)

```

```

Linear regression                                Number of obs   =    13,402
                                                F(25, 112)      =     7.22
                                                Prob > F         =    0.0000
                                                R-squared        =    0.0323
                                                Root MSE        =    .9824

```

(Std. err. adjusted for 113 clusters in codevillage)

```

-----
writescor |      Coefficient   Robust      t      P>|t|      [95% conf. interval]
-----+-----
      abc |   -.0510589      .0465429   -1.10   0.275   -.1432777      .04116
      post |   -.0039726      .0587009   -0.07   0.946   -.1202809      .1123357
      abcpst |   .1992111      .0879969    2.26   0.026    .0248564      .3735657
      avcode |
         2 |   -.0906601      .1079392   -0.84   0.403   -.3045277      .1232075
         3 |   -.183981      .1017302   -1.81   0.073   -.3855465      .0175844
         4 |   -.2894135      .1066402   -2.71   0.008   -.5007075     -.0781196
         5 |   -.2452143      .1044592   -2.35   0.021   -.452187      -.0382417
         6 |   -.46009      .1292994   -3.56   0.001   -.7162801     -.2038998
         8 |   -.2800115      .1198111   -2.34   0.021   -.5174018     -.0426211
         9 |   -.1620166      .1055456   -1.54   0.128   -.3711417      .0471086
        10 |   -.0048311      .2000725   -0.02   0.981   -.4012491      .391587
        11 |   -.390521      .0870401   -4.49   0.000   -.5629798     -.2180621
        12 |   -.2878447      .1350846   -2.13   0.035   -.5554976     -.0201919
        13 |   -.1591703      .1127097   -1.41   0.161   -.38249      .0641495
        14 |   -.2646314      .1041042   -2.54   0.012   -.4709005     -.0583622
        15 |   -.129693      .1554394   -0.83   0.406   -.4376763      .1782902
        16 |   .0366599      .1324394    0.28   0.782   -.2257518      .2990716
        17 |   -.1387642      .1230681   -1.13   0.262   -.3826078      .1050794

```

18		-.1951126	.1235594	-1.58	0.117	-.4399297	.0497046
19		-.679253	.0982517	-6.91	0.000	-.8739262	-.4845797
20		-.3457518	.1202588	-2.88	0.005	-.5840293	-.1074744
21		-.267037	.1218386	-2.19	0.030	-.5084445	-.0256295
22		.1134695	.1612048	0.70	0.483	-.2059372	.4328761
23		-.0857758	.1191486	-0.72	0.473	-.3218534	.1503018
24		-.2650121	.1637743	-1.62	0.108	-.58951	.0594857
_cons		.2043208	.0933573	2.19	0.031	.0193453	.3892962

```
. est store did_1
```

```
.
. regress mathzscore abc post abcpst i.avc, robust cluster(codev)
```

```
Linear regression                                Number of obs      =      13,420
                                                F(25, 112)         =        8.71
                                                Prob > F            =       0.0000
                                                R-squared           =       0.0387
                                                Root MSE           =       .95166
```

(Std. err. adjusted for 113 clusters in codevillage)

mathzscore	Coefficient	Robust std. err.	t	P> t	[95% conf. interval]	
abc	-.0951747	.0548499	-1.74	0.085	-.2038528	.0135033
post	-.00444	.065844	-0.07	0.946	-.1349015	.1260214
abcpst	.2495865	.0897821	2.78	0.006	.0716947	.4274783
avcode						
2	-.082131	.1782522	-0.46	0.646	-.4353149	.2710528
3	-.0925166	.1727398	-0.54	0.593	-.4347783	.2497451
4	-.3735547	.1702757	-2.19	0.030	-.7109342	-.0361752
5	-.1247134	.1690281	-0.74	0.462	-.459621	.2101942
6	-.5222786	.148996	-3.51	0.001	-.8174952	-.2270621
8	-.268576	.1565125	-1.72	0.089	-.5786855	.0415336
9	-.208784	.1494414	-1.40	0.165	-.504883	.087315
10	-.1499738	.1724666	-0.87	0.386	-.4916944	.1917467
11	-.2986701	.1561977	-1.91	0.058	-.6081558	.0108157
12	-.3242764	.1605311	-2.02	0.046	-.6423481	-.0062046
13	-.1888014	.1604644	-1.18	0.242	-.5067411	.1291383
14	-.486933	.178265	-2.73	0.007	-.8401423	-.1337236
15	-.1148496	.2321587	-0.49	0.622	-.5748424	.3451432
16	.0418162	.2112213	0.20	0.843	-.3766916	.460324
17	-.2581149	.1577508	-1.64	0.105	-.5706779	.054448
18	-.2168221	.166191	-1.30	0.195	-.5461083	.1124642
19	-.7515548	.1848091	-4.07	0.000	-1.11773	-.3853792
20	-.2996786	.1726373	-1.74	0.085	-.6417372	.0423801
21	-.3697023	.1827287	-2.02	0.045	-.7317558	-.0076488
22	-.0746031	.2050252	-0.36	0.717	-.4808343	.3316281
23	-.1667	.1775515	-0.94	0.350	-.5184955	.1850954
24	-.2404897	.1853159	-1.30	0.197	-.6076695	.12669
_cons	.2406417	.1498708	1.61	0.111	-.0563082	.5375915

```
. est store did_2
```

```
.
. regress writezscore abc post abcpst age female zarma kanuri dosso i.avc, robu
> st cluster(codev)
```

note: 21.avcode omitted because of collinearity.

Linear regression	Number of obs	=	12,823
	F(28, 112)	=	.
	Prob > F	=	.
	R-squared	=	0.0841
	Root MSE	=	.96124

(Std. err. adjusted for 113 clusters in codevillage)

writezscore	Coefficient	Robust std. err.	t	P> t	[95% conf. interval]	
abc	-.0550791	.0503067	-1.09	0.276	-.1547553	.0445971
post	-.0052542	.0598876	-0.09	0.930	-.1239138	.1134054
abcpst	.2060991	.0880806	2.34	0.021	.0315787	.3806196
age	-.0100185	.0010229	-9.79	0.000	-.0120452	-.0079918
female	-.422774	.0324581	-13.03	0.000	-.4870855	-.3584624
zarma	-.1243937	.1057711	-1.18	0.242	-.3339655	.0851782
kanuri	-.1453456	.1060114	-1.37	0.173	-.3553936	.0647023
dosso	.3834023	.1047878	3.66	0.000	.1757786	.5910259
avcode						
2	.1387582	.1246294	1.11	0.268	-.108179	.3856953
3	-.268829	.0572569	-4.70	0.000	-.3822763	-.1553817
4	-.3318701	.0502921	-6.60	0.000	-.4315175	-.2322227
5	-.2208393	.1226682	-1.80	0.075	-.4638906	.022212
6	-.0577199	.1676177	-0.34	0.731	-.3898329	.2743931
8	-.000999	.1281626	-0.01	0.994	-.2549368	.2529388
9	.1096527	.1391078	0.79	0.432	-.1659716	.3852771
10	.2264182	.2074351	1.09	0.277	-.1845878	.6374242
11	-.1705492	.1017395	-1.68	0.096	-.372133	.0310347
12	-.0089675	.1505911	-0.06	0.953	-.3073445	.2894094
13	-.2182531	.0614261	-3.55	0.001	-.3399611	-.0965451
14	-.3756919	.0560114	-6.71	0.000	-.4866713	-.2647126
15	-.2104435	.145473	-1.45	0.151	-.4986796	.0777926
16	.088227	.1346647	0.66	0.514	-.1785938	.3550479
17	.08145	.1392305	0.59	0.560	-.1944174	.3573175
18	.084162	.1285724	0.65	0.514	-.1705877	.3389117
19	-.7718081	.0503207	-15.34	0.000	-.8715121	-.6721041
20	-.1003749	.1456929	-0.69	0.492	-.3890466	.1882969
21	0 (omitted)					
22	-.0013611	.1286655	-0.01	0.992	-.2562953	.2535731
23	-.2019155	.0803801	-2.51	0.013	-.3611783	-.0426526
24	-.3243647	.1146495	-2.83	0.006	-.551528	-.0972014
_cons	.5003294	.1155349	4.33	0.000	.2714118	.729247

. est store did_3

```
.
. regress mathzscore abc post abcpst age female hausa zarma kanuri dosso i.avc,
> robust cluster(codev)
note: kanuri omitted because of collinearity.
note: 21.avcode omitted because of collinearity.
```

Linear regression	Number of obs	=	12,840
	F(28, 112)	=	.
	Prob > F	=	.
	R-squared	=	0.0824
	Root MSE	=	.93591

(Std. err. adjusted for 113 clusters in codevillage)

mathzscore	Coefficient	Robust std. err.	t	P> t	[95% conf. interval]	
abc	-.105952	.0594318	-1.78	0.077	-.2237086	.0118045
post	-.0103319	.0679903	-0.15	0.879	-.145046	.1243822
abcpst	.2638597	.0922572	2.86	0.005	.081064	.4466555
age	-.0088965	.0010682	-8.33	0.000	-.0110131	-.00678
female	-.3779148	.0326013	-11.59	0.000	-.44251	-.3133196
hausa	.0932102	.0730168	1.28	0.204	-.0514633	.2378836
zarma	.1057464	.1834039	0.58	0.565	-.2576449	.4691377
kanuri	0 (omitted)					
dosso	.3626226	.1232071	2.94	0.004	.1185034	.6067417
avcode						
2	.268268	.1617104	1.66	0.100	-.0521404	.5886763
3	-.06535	.0920711	-0.71	0.479	-.247777	.117077
4	-.3094394	.0837591	-3.69	0.000	-.4753973	-.1434815
5	-.1222296	.1807902	-0.68	0.500	-.4804422	.235983
6	-.0766599	.1412152	-0.54	0.588	-.3564596	.2031399
8	.0829937	.1301713	0.64	0.525	-.1749239	.3409114
9	.1486676	.1302288	1.14	0.256	-.1093641	.4066993
10	.1749696	.1550554	1.13	0.262	-.1322527	.482192
11	.0005789	.1234509	0.00	0.996	-.2440232	.2451809
12	.0370997	.1425613	0.26	0.795	-.2453673	.3195668
13	-.1389413	.0652473	-2.13	0.035	-.2682205	-.0096621
14	-.4829835	.0999152	-4.83	0.000	-.6809526	-.2850144
15	-.0844382	.1922667	-0.44	0.661	-.46539	.2965137
16	.0673805	.2137162	0.32	0.753	-.3560707	.4908316
17	.0614323	.1356061	0.45	0.651	-.2072538	.3301185
18	.1601654	.1415728	1.13	0.260	-.120343	.4406738
19	-.7326965	.113865	-6.43	0.000	-.9583054	-.5070876
20	.0532177	.1632214	0.33	0.745	-.2701846	.37662
21	0 (omitted)					
22	-.0748024	.1376478	-0.54	0.588	-.347534	.1979291
23	-.1663476	.0947249	-1.76	0.082	-.3540328	.0213377
24	-.1903549	.0968322	-1.97	0.052	-.3822156	.0015057
_cons	.2908555	.1517514	1.92	0.058	-.0098204	.5915314

. est store did_4

.
 . generate agesq = age * age
 (758 missing values generated)

. regress writezscore abc post abcpst age agesq female zarma kanuri dosso i.avc
 > , robust cluster(codev)
 note: 21.avcode omitted because of collinearity.

Linear regression	Number of obs	=	12,823
	F(29, 112)	=	.
	Prob > F	=	.
	R-squared	=	0.0852
	Root MSE	=	.96068

(Std. err. adjusted for 113 clusters in codevillage)

writezscore	Coefficient	Robust std. err.	t	P> t	[95% conf. interval]	
-------------	-------------	---------------------	---	------	----------------------	--

abc	-.0556091	.0502835	-1.11	0.271	-.1552393	.0440212
post	-.0041433	.0599477	-0.07	0.945	-.122922	.1146354
abcpost	.2053414	.088065	2.33	0.022	.0308519	.3798308
age	.0035228	.004061	0.87	0.388	-.0045236	.0115692
agesq	-.0001758	.0000494	-3.56	0.001	-.0002738	-.0000778
female	-.4199216	.0321456	-13.06	0.000	-.4836141	-.3562292
zarma	-.1337417	.1016719	-1.32	0.191	-.3351915	.0677082
kanuri	-.1396212	.108159	-1.29	0.199	-.3539243	.0746819
dosso	.3954	.1042005	3.79	0.000	.1889402	.6018598
avcode						
2	.1364994	.1274856	1.07	0.287	-.1160971	.3890958
3	-.2852728	.0552272	-5.17	0.000	-.3946985	-.1758472
4	-.3479106	.0501266	-6.94	0.000	-.4472301	-.2485911
5	-.2208747	.1190167	-1.86	0.066	-.4566911	.0149418
6	-.0691594	.1712647	-0.40	0.687	-.4084984	.2701796
8	.0016404	.127715	0.01	0.990	-.2514105	.2546913
9	.1125322	.1364198	0.82	0.411	-.1577661	.3828305
10	.2289574	.2067217	1.11	0.270	-.1806352	.6385499
11	-.154831	.1025477	-1.51	0.134	-.3580161	.048354
12	-.0105509	.1529626	-0.07	0.945	-.3136267	.2925249
13	-.2267797	.0620862	-3.65	0.000	-.3497955	-.1037639
14	-.3890739	.0566752	-6.86	0.000	-.5013685	-.2767793
15	-.2320266	.1458889	-1.59	0.115	-.5210868	.0570335
16	.0818397	.128478	0.64	0.525	-.172723	.3364024
17	.0798223	.1379494	0.58	0.564	-.1935068	.3531514
18	.0804048	.1281812	0.63	0.532	-.1735698	.3343795
19	-.7866782	.0510107	-15.42	0.000	-.8877493	-.6856071
20	-.0997755	.1448084	-0.69	0.492	-.3866948	.1871437
21	0 (omitted)					
22	-.0145482	.1298051	-0.11	0.911	-.2717404	.242644
23	-.2162934	.0826966	-2.62	0.010	-.3801462	-.0524407
24	-.3294515	.1137905	-2.90	0.005	-.5549129	-.1039901
_cons	.2668819	.1389208	1.92	0.057	-.0083718	.5421356

. est store did_5

.
. regress mathzscore abc post abcpost age agesq female zarma kanuri dosso i.avc,
> robust cluster(codev)
note: 21.avcode omitted because of collinearity.

Linear regression	Number of obs	=	12,840
	F(29, 112)	=	.
	Prob > F	=	.
	R-squared	=	0.0834
	Root MSE	=	.93544

(Std. err. adjusted for 113 clusters in codevillage)

mathzscore	Coefficient	Robust std. err.	t	P> t	[95% conf. interval]
abc	-.1064173	.0592745	-1.80	0.075	-.2238621 .0110275
post	-.009312	.0680841	-0.14	0.891	-.1442119 .1255878
abcpost	.2631894	.0922854	2.85	0.005	.0803376 .4460411
age	.0034686	.0043576	0.80	0.428	-.0051655 .0121027
agesq	-.0001605	.000055	-2.92	0.004	-.0002694 -.0000516
female	-.3753278	.0324433	-11.57	0.000	-.43961 -.3110456
zarma	.003916	.1634816	0.02	0.981	-.3200019 .3278339
kanuri	-.0880252	.0754579	-1.17	0.246	-.2375354 .061485

dosso	.3736709	.1225222	3.05	0.003	.1309089	.6164329
avcode						
2	.2662544	.1626552	1.64	0.104	-.056026	.5885348
3	-.0803924	.0902928	-0.89	0.375	-.259296	.0985113
4	-.3240728	.0846412	-3.83	0.000	-.4917785	-.1563671
5	-.1220011	.1768527	-0.69	0.492	-.472412	.2284099
6	-.0869908	.1415421	-0.61	0.540	-.3674384	.1934567
8	.0854807	.1291402	0.66	0.509	-.170394	.3413553
9	.1513965	.1288535	1.17	0.243	-.1039101	.4067032
10	.1773566	.1549541	1.14	0.255	-.1296651	.4843783
11	.0150215	.1264835	0.12	0.906	-.2355893	.2656322
12	.0358183	.1431655	0.25	0.803	-.2478458	.3194825
13	-.1467585	.0657588	-2.23	0.028	-.277051	-.0164659
14	-.4952641	.0992215	-4.99	0.000	-.6918587	-.2986695
15	-.1041566	.1931611	-0.54	0.591	-.4868805	.2785674
16	.0615991	.2080679	0.30	0.768	-.3506608	.4738591
17	.0600293	.134215	0.45	0.656	-.2059006	.3259592
18	.1568323	.1409379	1.11	0.268	-.1224181	.4360827
19	-.7462927	.1133911	-6.58	0.000	-.9709627	-.5216226
20	.0537575	.1620974	0.33	0.741	-.2674178	.3749327
21	0	(omitted)				
22	-.0867922	.1389986	-0.62	0.534	-.3622002	.1886158
23	-.179502	.0964194	-1.86	0.065	-.3705446	.0115406
24	-.1950376	.0950146	-2.05	0.042	-.3832969	-.0067784
_cons	.1707563	.1583278	1.08	0.283	-.1429498	.4844625

```
. est store did_6
```

```
. qui tab codevillage, gen(village_dum)
```

```
. reg writezscore abc post abcpst age agesq female village_dum*, robust cluster
> (codev)
note: village_dum23 omitted because of collinearity.
note: village_dum71 omitted because of collinearity.
```

Linear regression	Number of obs	=	12,823
	F(4, 112)	=	.
	Prob > F	=	.
	R-squared	=	0.1310
	Root MSE	=	.93953

(Std. err. adjusted for 113 clusters in codevillage)

writezscore	Coefficient	Robust std. err.	t	P> t	[95% conf. interval]
abc	.2000127	.0409423	4.89	0.000	.1188908 .2811347
post	-.0121467	.0602387	-0.20	0.841	-.131502 .1072085
abcpst	.1981458	.0900948	2.20	0.030	.0196346 .3766571
age	.0035513	.0038522	0.92	0.359	-.0040813 .0111838
agesq	-.0001729	.0000476	-3.64	0.000	-.0002671 -.0000786
female	-.42022	.0318673	-13.19	0.000	-.4833609 -.3570791
village_dum1	.2463838	.0120014	20.53	0.000	.2226045 .2701631
village_dum2	.3594132	.0114612	31.36	0.000	.3367043 .3821221
village_dum3	-.0304211	.0057636	-5.28	0.000	-.041841 -.0190012
village_dum4	.3483127	.0112254	31.03	0.000	.326071 .3705543
village_dum5	-.2166004	.0053286	-40.65	0.000	-.2271583 -.2060425
village_dum6	.3707893	.0138283	26.81	0.000	.3433903 .3981883

village_dum7	.0085449	.0075632	1.13	0.261	-.0064405	.0235304
village_dum8	.2758065	.0130167	21.19	0.000	.2500156	.3015975
village_dum9	.2509161	.0112013	22.40	0.000	.2287221	.27311
village_dum10	-.0493719	.0053025	-9.31	0.000	-.059878	-.0388657
village_dum11	.4104497	.0188899	21.73	0.000	.3730217	.4478777
village_dum12	.2046092	.0073339	27.90	0.000	.190078	.2191405
village_dum13	.3452605	.0118047	29.25	0.000	.321871	.3686501
village_dum14	1.049788	.0139625	75.19	0.000	1.022123	1.077453
village_dum15	.0268117	.0056937	4.71	0.000	.0155304	.038093
village_dum16	.0829354	.0055801	14.86	0.000	.0718791	.0939916
village_dum17	-.0787306	.012587	-6.25	0.000	-.1036702	-.0537911
village_dum18	.0301431	.0112097	2.69	0.008	.0079326	.0523537
village_dum19	.2509395	.0221304	11.34	0.000	.207091	.2947881
village_dum20	.1350521	.0102752	13.14	0.000	.1146931	.1554112
village_dum21	.292485	.0092702	31.55	0.000	.2741173	.3108526
village_dum22	.3646007	.0131779	27.67	0.000	.3384904	.390711
village_dum23	0	(omitted)				
village_dum24	-.122782	.0147775	-8.31	0.000	-.1520617	-.0935022
village_dum25	.2294518	.0153605	14.94	0.000	.1990169	.2598866
village_dum26	-.043829	.0062296	-7.04	0.000	-.0561721	-.031486
village_dum27	.4659355	.0088764	52.49	0.000	.4483481	.483523
village_dum28	.3299478	.0171415	19.25	0.000	.2959841	.3639114
village_dum29	-.0959563	.0054068	-17.75	0.000	-.1066692	-.0852433
village_dum30	.4381723	.0085531	51.23	0.000	.4212255	.4551191
village_dum31	.3144499	.0145556	21.60	0.000	.2856099	.34329
village_dum32	.4706423	.0218307	21.56	0.000	.4273876	.513897
village_dum33	-.1921805	.0148748	-12.92	0.000	-.221653	-.1627079
village_dum34	.2782096	.0166371	16.72	0.000	.2452453	.3111739
village_dum35	.4653453	.0128306	36.27	0.000	.439923	.4907675
village_dum36	.1857377	.0113258	16.40	0.000	.1632971	.2081783
village_dum37	-.1328043	.0049865	-26.63	0.000	-.1426844	-.1229243
village_dum38	.3033545	.005656	53.63	0.000	.2921479	.3145611
village_dum39	.6047206	.0119595	50.56	0.000	.5810244	.6284168
village_dum40	.7469455	.0073236	101.99	0.000	.7324348	.7614563
village_dum41	.0820559	.00511	16.06	0.000	.071931	.0921808
village_dum42	.8363101	.0136051	61.47	0.000	.8093534	.8632669
village_dum43	.3680188	.0123875	29.71	0.000	.3434745	.3925631
village_dum44	.6109077	.0061925	98.65	0.000	.598638	.6231773
village_dum45	-.3060901	.014849	-20.61	0.000	-.3355114	-.2766688
village_dum46	-.1230971	.0129077	-9.54	0.000	-.148672	-.0975222
village_dum47	-.4282263	.0103153	-41.51	0.000	-.4486647	-.4077878
village_dum48	-.0446813	.0127734	-3.50	0.001	-.0699903	-.0193724
village_dum49	.1746349	.0063877	27.34	0.000	.1619785	.1872913
village_dum50	.1084691	.0155095	6.99	0.000	.0777389	.1391993
village_dum51	.0750311	.0118576	6.33	0.000	.0515367	.0985255
village_dum52	.0917464	.0103363	8.88	0.000	.0712663	.1122265
village_dum53	-.1370117	.0061662	-22.22	0.000	-.1492293	-.1247941
village_dum54	.6250278	.0115922	53.92	0.000	.6020594	.6479962
village_dum55	-.0005771	.0059555	-0.10	0.923	-.0123771	.0112228
village_dum56	.5881901	.0206581	28.47	0.000	.5472588	.6291214
village_dum57	.5582569	.0143967	38.78	0.000	.5297317	.586782
village_dum58	.0658919	.0055316	11.91	0.000	.0549317	.076852
village_dum59	-.0551618	.0104185	-5.29	0.000	-.0758048	-.0345188
village_dum60	.5489568	.0188675	29.10	0.000	.5115734	.5863403
village_dum61	.2446412	.004813	50.83	0.000	.2351049	.2541775
village_dum62	.3517421	.0067813	51.87	0.000	.3383058	.3651784
village_dum63	.0262433	.0052229	5.02	0.000	.0158949	.0365917
village_dum64	-.1307429	.0104654	-12.49	0.000	-.1514788	-.110007
village_dum65	.1924216	.0122953	15.65	0.000	.16806	.2167831
village_dum66	.413397	.0117836	35.08	0.000	.3900493	.4367447
village_dum67	.1047458	.0065449	16.00	0.000	.0917779	.1177137
village_dum68	.3082862	.0120073	25.67	0.000	.2844952	.3320772
village_dum69	-.0362231	.0138807	-2.61	0.010	-.0637259	-.0087204

village_dum70	-.2047813	.0136022	-15.05	0.000	-.2317324	-.1778302
village_dum71	0	(omitted)				
village_dum72	.5147862	.0084002	61.28	0.000	.4981424	.53143
village_dum73	.0333197	.0162646	2.05	0.043	.0010934	.0655459
village_dum74	.0101105	.0063275	1.60	0.113	-.0024267	.0226478
village_dum75	.1320347	.0068668	19.23	0.000	.118429	.1456405
village_dum76	-.0916407	.0159302	-5.75	0.000	-.1232043	-.0600772
village_dum77	.2873811	.0111221	25.84	0.000	.2653442	.3094181
village_dum78	-.3089412	.0067091	-46.05	0.000	-.3222344	-.295648
village_dum79	.2622445	.0157479	16.65	0.000	.231042	.293447
village_dum80	.4049001	.0155201	26.09	0.000	.3741491	.435651
village_dum81	-.1971048	.0060174	-32.76	0.000	-.2090276	-.1851821
village_dum82	.0200442	.0119882	1.67	0.097	-.003709	.0437974
village_dum83	-.095612	.0100623	-9.50	0.000	-.1155491	-.0756749
village_dum84	.2209478	.0145085	15.23	0.000	.192201	.2496946
village_dum85	.4659644	.0132508	35.16	0.000	.4397095	.4922192
village_dum86	.3321916	.0094833	35.03	0.000	.3134017	.3509814
village_dum87	.1503892	.0146662	10.25	0.000	.1213301	.1794484
village_dum88	.2690468	.0110279	24.40	0.000	.2471964	.2908972
village_dum89	-.1688341	.0068497	-24.65	0.000	-.182406	-.1552623
village_dum90	.6203053	.0081072	76.51	0.000	.6042419	.6363686
village_dum91	-.0884095	.0082307	-10.74	0.000	-.1047177	-.0721014
village_dum92	-.2753335	.014496	-18.99	0.000	-.3040555	-.2466115
village_dum93	.0915902	.0134923	6.79	0.000	.0648569	.1183236
village_dum94	.5520984	.0106833	51.68	0.000	.5309307	.5732661
village_dum95	-.1543976	.0098757	-15.63	0.000	-.1739651	-.1348302
village_dum96	.0108074	.0169062	0.64	0.524	-.0226901	.0443048
village_dum97	1.172814	.0039729	295.20	0.000	1.164942	1.180686
village_dum98	.285212	.0122306	23.32	0.000	.2609786	.3094453
village_dum99	-.342363	.0146582	-23.36	0.000	-.3714064	-.3133196
village_d~100	-.1649565	.0235799	-7.00	0.000	-.211677	-.118236
village_d~101	.5504485	.0029785	184.80	0.000	.5445469	.5563501
village_d~102	-.0800508	.0082518	-9.70	0.000	-.0964007	-.0637009
village_d~103	.1635836	.0043785	37.36	0.000	.1549082	.172259
village_d~104	.0386099	.0064398	6.00	0.000	.0258502	.0513695
village_d~105	-.0427333	.0089744	-4.76	0.000	-.0605149	-.0249516
village_d~106	.0958824	.0055424	17.30	0.000	.0849009	.1068639
village_d~107	.3970639	.0140557	28.25	0.000	.3692142	.4249135
village_d~108	.2835363	.015932	17.80	0.000	.2519691	.3151034
village_d~109	.0000214	.0068973	0.00	0.998	-.0136446	.0136875
village_d~110	.1243371	.0118457	10.50	0.000	.1008664	.1478078
village_d~111	-.5558233	.0136063	-40.85	0.000	-.5827823	-.5288642
village_d~112	-.0863275	.0147459	-5.85	0.000	-.1155447	-.0571104
village_d~113	.2710067	.0152354	17.79	0.000	.2408198	.3011937
_cons	.0503767	.0805497	0.63	0.533	-.1092223	.2099757

```
-----
. est store did_7
```

```
.
. reg mathzscore abc post abcpst age agesq female village_dum*, robust cluster(
> codev)
note: village_dum23 omitted because of collinearity.
note: village_dum71 omitted because of collinearity.
```

Linear regression	Number of obs	=	12,840
	F(4, 112)	=	.
	Prob > F	=	.
	R-squared	=	0.1393
	Root MSE	=	.90959

```
(Std. err. adjusted for 113 clusters in codevillage)
-----
```

mathzscore	Coefficient	Robust std. err.	t	P> t	[95% conf. interval]	
abc	.2304088	.0424443	5.43	0.000	.1463109	.3145067
post	-.0269673	.0692329	-0.39	0.698	-.1641434	.1102087
abcpost	.2581796	.0942908	2.74	0.007	.0713545	.4450047
age	.0014676	.0040803	0.36	0.720	-.006617	.0095522
agesq	-.0001277	.0000508	-2.51	0.013	-.0002285	-.000027
female	-.3739415	.0324674	-11.52	0.000	-.4382715	-.3096115
village_dum1	.1340469	.0104668	12.81	0.000	.1133082	.1547855
village_dum2	.6172878	.0107638	57.35	0.000	.5959606	.638615
village_dum3	.1121939	.0055464	20.23	0.000	.1012044	.1231833
village_dum4	.0476657	.0106083	4.49	0.000	.0266467	.0686847
village_dum5	-.2245481	.0051292	-43.78	0.000	-.2347109	-.2143853
village_dum6	.57214	.0156429	36.58	0.000	.5411457	.6031344
village_dum7	.1769142	.0077772	22.75	0.000	.1615046	.1923238
village_dum8	.5647013	.0112651	50.13	0.000	.5423811	.5870216
village_dum9	.5767816	.0127261	45.32	0.000	.5515665	.6019966
village_dum10	-.0268811	.0050898	-5.28	0.000	-.0369659	-.0167962
village_dum11	.7422923	.0203261	36.52	0.000	.7020187	.7825658
village_dum12	.2898047	.0078318	37.00	0.000	.274287	.3053223
village_dum13	.3964721	.0126973	31.22	0.000	.371314	.4216303
village_dum14	1.437935	.0151704	94.79	0.000	1.407877	1.467993
village_dum15	-.080201	.005773	-13.89	0.000	-.0916395	-.0687625
village_dum16	.0220621	.0055657	3.96	0.000	.0110343	.0330899
village_dum17	.3294287	.0108356	30.40	0.000	.3079594	.3508981
village_dum18	.0143654	.0111573	1.29	0.201	-.0077414	.0364721
village_dum19	.4050257	.0219306	18.47	0.000	.361573	.4484785
village_dum20	.1595526	.0110434	14.45	0.000	.1376715	.1814337
village_dum21	.0388279	.0095568	4.06	0.000	.0198923	.0577634
village_dum22	.6583834	.0142258	46.28	0.000	.6301968	.68657
village_dum23	0	(omitted)				
village_dum24	-.2701003	.0130883	-20.64	0.000	-.2960331	-.2441675
village_dum25	.4073737	.0162667	25.04	0.000	.3751434	.4396041
village_dum26	.0945878	.0062123	15.23	0.000	.0822788	.1068967
village_dum27	.2911824	.007901	36.85	0.000	.2755276	.3068373
village_dum28	.7692604	.0184037	41.80	0.000	.7327958	.8057249
village_dum29	-.0933571	.0053484	-17.46	0.000	-.1039543	-.0827598
village_dum30	.5304775	.0087941	60.32	0.000	.5130532	.5479018
village_dum31	.3664185	.0144708	25.32	0.000	.3377465	.3950906
village_dum32	.5243534	.0225591	23.24	0.000	.4796555	.5690513
village_dum33	-.0941615	.0148258	-6.35	0.000	-.1235369	-.0647861
village_dum34	.6177983	.0179047	34.50	0.000	.5823224	.6532742
village_dum35	.3967689	.0115812	34.26	0.000	.3738222	.4197155
village_dum36	.2593729	.0114671	22.62	0.000	.2366522	.2820935
village_dum37	.1308264	.0049358	26.51	0.000	.1210469	.140606
village_dum38	.5692132	.0059825	95.15	0.000	.5573596	.5810668
village_dum39	.6312953	.011525	54.78	0.000	.6084601	.6541306
village_dum40	.2490621	.0078883	31.57	0.000	.2334324	.2646918
village_dum41	.1946032	.0047017	41.39	0.000	.1852873	.2039191
village_dum42	.7854782	.0119751	65.59	0.000	.761751	.8092053
village_dum43	.291605	.014299	20.39	0.000	.2632734	.3199367
village_dum44	.6651024	.0064149	103.68	0.000	.6523921	.6778128
village_dum45	-.3652751	.0164423	-22.22	0.000	-.3978534	-.3326967
village_dum46	-.0590672	.014429	-4.09	0.000	-.0876564	-.0304781
village_dum47	-.0989499	.0089006	-11.12	0.000	-.1165854	-.0813144
village_dum48	-.0538021	.0128661	-4.18	0.000	-.0792946	-.0283095
village_dum49	.1233083	.0061411	20.08	0.000	.1111405	.1354762
village_dum50	-.1059587	.014749	-7.18	0.000	-.135182	-.0767354
village_dum51	.1040803	.0104587	9.95	0.000	.0833577	.1248029
village_dum52	-.1020964	.0101783	-10.03	0.000	-.1222634	-.0819294
village_dum53	-.2980892	.0059544	-50.06	0.000	-.3098871	-.2862913
village_dum54	.879559	.0130979	67.15	0.000	.8536072	.9055108

village_dum55	.0227232	.0057806	3.93	0.000	.0112696	.0341768
village_dum56	.4625065	.0214378	21.57	0.000	.4200303	.5049827
village_dum57	.7876855	.0126405	62.31	0.000	.7626401	.8127309
village_dum58	.3254212	.005368	60.62	0.000	.3147851	.3360573
village_dum59	-.0691536	.0111554	-6.20	0.000	-.0912567	-.0470506
village_dum60	.6435241	.02005	32.10	0.000	.6037977	.6832506
village_dum61	.7981737	.0052147	153.06	0.000	.7878414	.8085059
village_dum62	.5254195	.0069438	75.67	0.000	.5116612	.5391777
village_dum63	.4912544	.0055708	88.18	0.000	.4802165	.5022923
village_dum64	.2971935	.0089458	33.22	0.000	.2794686	.3149185
village_dum65	.0620621	.0113341	5.48	0.000	.0396051	.0845192
village_dum66	.7914963	.0095686	82.72	0.000	.7725373	.8104553
village_dum67	.3461106	.006939	49.88	0.000	.3323619	.3598593
village_dum68	.3548055	.0111941	31.70	0.000	.3326259	.3769851
village_dum69	.144745	.0124008	11.67	0.000	.1201744	.1693156
village_dum70	-.1462085	.0121	-12.08	0.000	-.170183	-.1222339
village_dum71	0	(omitted)				
village_dum72	.4309493	.0085322	50.51	0.000	.4140438	.4478548
village_dum73	.0986976	.0147858	6.68	0.000	.0694015	.1279937
village_dum74	.4232973	.0068322	61.96	0.000	.4097601	.4368345
village_dum75	.1901039	.0072444	26.24	0.000	.17575	.2044578
village_dum76	.1680752	.0180188	9.33	0.000	.1323731	.2037772
village_dum77	.2816224	.0123935	22.72	0.000	.2570663	.3061785
village_dum78	-.2342353	.0061579	-38.04	0.000	-.2464365	-.2220342
village_dum79	.1845568	.0139647	13.22	0.000	.1568876	.212226
village_dum80	.6649395	.0173373	38.35	0.000	.6305879	.6992912
village_dum81	-.1650774	.0056778	-29.07	0.000	-.1763273	-.1538275
village_dum82	-.1862645	.0112038	-16.63	0.000	-.2084634	-.1640655
village_dum83	-.0190238	.0110537	-1.72	0.088	-.0409253	.0028776
village_dum84	.3361813	.0131455	25.57	0.000	.3101351	.3622274
village_dum85	.5654703	.0145002	39.00	0.000	.53674	.5942007
village_dum86	.377591	.0098252	38.43	0.000	.3581236	.3970585
village_dum87	.1150872	.0132007	8.72	0.000	.0889318	.1412427
village_dum88	.4554562	.0117098	38.90	0.000	.4322548	.4786577
village_dum89	-.0764105	.0063255	-12.08	0.000	-.0889436	-.0638774
village_dum90	.5886127	.0089668	65.64	0.000	.5708461	.6063792
village_dum91	-.0286019	.0076692	-3.73	0.000	-.0437975	-.0134064
village_dum92	-.1631718	.0133078	-12.26	0.000	-.1895396	-.136804
village_dum93	.2248553	.0153166	14.68	0.000	.1945074	.2552032
village_dum94	.5213362	.0121439	42.93	0.000	.4972746	.5453978
village_dum95	.0025262	.0092995	0.27	0.786	-.0158996	.020952
village_dum96	-.0152691	.0155402	-0.98	0.328	-.0460599	.0155218
village_dum97	.6015611	.0034217	175.81	0.000	.5947814	.6083408
village_dum98	.4379961	.0133729	32.75	0.000	.4114994	.4644928
village_dum99	-.2128962	.0128816	-16.53	0.000	-.2384194	-.187373
village_d~100	.0261496	.0233281	1.12	0.265	-.0200719	.0723712
village_d~101	.5731722	.0032539	176.15	0.000	.566725	.5796194
village_d~102	-.0715143	.0074591	-9.59	0.000	-.0862936	-.0567351
village_d~103	.1229107	.0046703	26.32	0.000	.1136571	.1321644
village_d~104	.2589786	.0067059	38.62	0.000	.2456918	.2722654
village_d~105	-.0897122	.0082611	-10.86	0.000	-.1060805	-.0733439
village_d~106	.4165499	.0057679	72.22	0.000	.4051214	.4279783
village_d~107	.6256733	.015856	39.46	0.000	.5942568	.6570898
village_d~108	.6600402	.0176457	37.41	0.000	.6250775	.695003
village_d~109	.1066969	.0068667	15.54	0.000	.0930913	.1203025
village_d~110	.3307869	.0120544	27.44	0.000	.3069027	.3546712
village_d~111	-.4362401	.0122494	-35.61	0.000	-.4605108	-.4119694
village_d~112	.0973619	.0129308	7.53	0.000	.0717412	.1229827
village_d~113	.3751599	.014136	26.54	0.000	.3471513	.4031684
_cons	-.0898277	.0876636	-1.02	0.308	-.2635219	.0838664

. est store did_8

```

.
. esttab did_ * ///
> using ../manuscript/Tables/did_result.tex, ///
> style(tex) booktabs keep(abc post abcpst age agesq female) ///
> mtitle("literacy" "math" "literacy" "math" "literacy" "math" "literacy" "math"
> ) ///
> star(* 0.1 ** 0.05 *** 0.01) ///
> se ///
> scalars("r2 R-squared") ///
> replace
(output written to ../manuscript/Tables/did_result.tex)

.
. /*****TABLE 4 *****/
. /* Difference-In-Difference-In-Difference Estimation*/
.
. use "ABCtestscore.dta", clear

.
. keep if round==1|round==2|round==4
(8,848 observations deleted)

.
. generate agesq = age * age
(758 missing values generated)

. capture drop region regionpost regionabc abcregionpost

. gen region=dosso==1

. gen regionpost=region*post

. gen regionabc=region*abc

. gen abcregionpost=regionabc*post

.
. reg writezscore abcpst abc post region regionpost regionabc abcregionpost coh
> ort2009 female age agesq i.avc, robust cluster(codev)
note: 21.avcode omitted because of collinearity.

```

```

Linear regression              Number of obs   =    12,823
                              F(32, 112)         =     17.62
                              Prob > F           =     0.0000
                              R-squared          =     0.0867
                              Root MSE       =     .95998

```

(Std. err. adjusted for 113 clusters in codevillage)

writezscore	Coefficient	Robust std. err.	t	P> t	[95% conf. interval]	
abcpst	.1875113	.1546648	1.21	0.228	-.1189371	.4939597
abc	-.0645277	.0708698	-0.91	0.365	-.2049472	.0758917
post	-.0647489	.1104386	-0.59	0.559	-.2835688	.154071
region	.2101382	.1447979	1.45	0.150	-.0767602	.4970366
regionpost	.07895	.1294945	0.61	0.543	-.1776269	.3355268
regionabc	.0141632	.0953904	0.15	0.882	-.1748406	.2031671
abcregionpost	.0350682	.1858886	0.19	0.851	-.3332461	.4033825
cohort2009	.0761185	.0469876	1.62	0.108	-.0169814	.1692184
female	-.4209914	.0323125	-13.03	0.000	-.4850145	-.3569684
age	.0032988	.0041922	0.79	0.433	-.0050075	.0116052

agesq	-.0001733	.0000507	-3.42	0.001	-.0002737	-.0000729
avcode						
2	.1311723	.1228699	1.07	0.288	-.1122787	.3746233
3	-.1592494	.0848302	-1.88	0.063	-.3273295	.0088308
4	-.2273826	.0936891	-2.43	0.017	-.4130157	-.0417496
5	-.2269041	.1051112	-2.16	0.033	-.4351685	-.0186397
6	-.2049445	.1416413	-1.45	0.151	-.4855886	.0756995
8	.0035552	.1271581	0.03	0.978	-.2483922	.2555027
9	.0539037	.1132944	0.48	0.635	-.1705747	.2783821
10	.2146739	.2216326	0.97	0.335	-.2244627	.6538106
11	-.147341	.0994785	-1.48	0.141	-.3444449	.049763
12	-.051788	.1551379	-0.33	0.739	-.3591739	.2555979
13	-.0824452	.1021807	-0.81	0.421	-.2849032	.1200128
14	-.2402021	.0833075	-2.88	0.005	-.4052651	-.075139
15	-.1066155	.1510305	-0.71	0.482	-.4058631	.1926321
16	.0642228	.1040609	0.62	0.538	-.1419606	.2704061
17	.0832575	.1264731	0.66	0.512	-.1673328	.3338478
18	.0791907	.1226077	0.65	0.520	-.1637407	.3221221
19	-.6747156	.0959081	-7.04	0.000	-.8647453	-.4846859
20	-.0988615	.1439464	-0.69	0.494	-.3840729	.1863499
21	0	(omitted)				
22	.1254239	.152612	0.82	0.413	-.1769572	.427805
23	-.0806136	.1032451	-0.78	0.437	-.2851805	.1239534
24	-.2120672	.1314206	-1.61	0.109	-.4724604	.0483259
_cons	.269378	.1478756	1.82	0.071	-.0236186	.5623745

. est store ddd_1

.
. reg mathzscore abcpost abc post region regionpost regionabc abcregionpost coho
> rt2009 female age agesq i.avc, robust cluster(codev)
note: 21.avcode omitted because of collinearity.

Linear regression	Number of obs	=	12,840
	F(32, 112)	=	18.76
	Prob > F	=	0.0000
	R-squared	=	0.0906
	Root MSE	=	.93184

(Std. err. adjusted for 113 clusters in codevillage)

mathzscore	Coefficient	Robust std. err.	t	P> t	[95% conf. interval]
abcpost	.1700956	.1361127	1.25	0.214	-.0995944 .4397855
abc	-.091966	.0667008	-1.38	0.171	-.2241251 .0401932
post	-.0722764	.1085576	-0.67	0.507	-.2873694 .1428166
region	.2761222	.1819218	1.52	0.132	-.0843325 .6365769
regionpost	.0676242	.1382878	0.49	0.626	-.2063754 .3416238
regionabc	-.0138299	.1019994	-0.14	0.892	-.2159286 .1882688
abcregionpost	.1621943	.1822125	0.89	0.375	-.1988365 .5232251
cohort2009	.1497525	.044429	3.37	0.001	.0617222 .2377829
female	-.3767175	.0327101	-11.52	0.000	-.4415285 -.3119066
age	.0029241	.004401	0.66	0.508	-.0057958 .011644
agesq	-.000155	.0000554	-2.80	0.006	-.0002647 -.0000452
avcode					
2	.2547139	.1385283	1.84	0.069	-.0197621 .5291899
3	-.0545556	.1410739	-0.39	0.700	-.3340756 .2249643
4	-.3094012	.1566883	-1.97	0.051	-.619859 .0010565

5		-.0910436	.1573528	-0.58	0.564	-.4028181	.2207308
6		-.165273	.119908	-1.38	0.171	-.4028553	.0723094
8		.0907038	.1286382	0.71	0.482	-.1641764	.345584
9		.104275	.1178035	0.89	0.378	-.1291376	.3376877
10		.1476765	.1663658	0.89	0.377	-.1819559	.4773089
11		.0321709	.1156865	0.28	0.781	-.1970471	.2613889
12		-.0001426	.1541682	-0.00	0.999	-.3056072	.305322
13		-.0841079	.1350368	-0.62	0.535	-.351666	.1834501
14		-.4284876	.1387466	-3.09	0.003	-.7033961	-.1535791
15		-.0805993	.2056189	-0.39	0.696	-.4880068	.3268082
16		.0711743	.1709724	0.42	0.678	-.2675856	.4099342
17		.0658755	.1195103	0.55	0.583	-.1709188	.3026697
18		.1540878	.1263141	1.22	0.225	-.0961874	.404363
19		-.7456012	.170303	-4.38	0.000	-1.083035	-.4081677
20		.056219	.1598665	0.35	0.726	-.2605358	.3729739
21		0 (omitted)					
22		-.0338572	.1828015	-0.19	0.853	-.396055	.3283406
23		-.1381339	.1564119	-0.88	0.379	-.448044	.1717763
24		-.1882473	.1542967	-1.22	0.225	-.4939665	.1174718
_cons		.1469647	.1576319	0.93	0.353	-.1653627	.459292

. est store ddd_2

.
 . reg writezscore abc female post femalepost femaleabc abcpost abcfemalepost coh
 > ort2009 age agesq i.avc, robust cluster(codev)

Linear regression	Number of obs	=	12,823
	F(32, 112)	=	19.04
	Prob > F	=	0.0000
	R-squared	=	0.0995
	Root MSE	=	.95323

(Std. err. adjusted for 113 clusters in codevillage)

writezscore	Coefficient	Robust std. err.	t	P> t	[95% conf. interval]	
abc	-.0363614	.0615562	-0.59	0.556	-.1583271	.0856043
female	-.1418064	.0488895	-2.90	0.004	-.2386747	-.0449382
post	.2374158	.063656	3.73	0.000	.1112896	.363542
femalepost	-.4939304	.0637036	-7.75	0.000	-.6201509	-.3677099
femaleabc	-.0360335	.0685321	-0.53	0.600	-.171821	.099754
abcpost	.174952	.0993676	1.76	0.081	-.0219322	.3718361
abcfemalepost	.0513733	.0920257	0.56	0.578	-.1309639	.2337105
cohort2009	.0762103	.0469247	1.62	0.107	-.0167649	.1691856
age	.0031189	.004167	0.75	0.456	-.0051374	.0113752
agesq	-.0001707	.0000506	-3.37	0.001	-.000271	-.0000704
avcode						
2	-.1474886	.0979639	-1.51	0.135	-.3415916	.0466144
3	-.1649647	.0846114	-1.95	0.054	-.3326113	.002682
4	-.2301215	.0911768	-2.52	0.013	-.4107766	-.0494664
5	-.2332138	.1040985	-2.24	0.027	-.4394716	-.0269559
6	-.4860539	.1298741	-3.74	0.000	-.7433829	-.2287249
8	-.27777	.1047175	-2.65	0.009	-.4852544	-.0702856
9	-.2214196	.0866819	-2.55	0.012	-.3931687	-.0496704
10	-.0568964	.2068169	-0.28	0.784	-.4666777	.3528848
11	-.4245775	.0741329	-5.73	0.000	-.5714624	-.2776926
12	-.3273215	.1398347	-2.34	0.021	-.604386	-.050257
13	-.089724	.0993974	-0.90	0.369	-.2866672	.1072191

14		-.2399954	.0838234	-2.86	0.005	-.4060807	-.0739102
15		-.1092933	.1502068	-0.73	0.468	-.4069088	.1883222
16		.0630432	.1054094	0.60	0.551	-.1458119	.2718984
17		-.2006471	.1066207	-1.88	0.062	-.4119024	.0106083
18		-.201768	.1010589	-2.00	0.048	-.4020033	-.0015327
19		-.6811549	.0948098	-7.18	0.000	-.8690084	-.4933014
20		-.3744653	.1310156	-2.86	0.005	-.6340559	-.1148748
21		-.2741017	.1172135	-2.34	0.021	-.5063453	-.0418581
22		.121534	.1516294	0.80	0.425	-.1789003	.4219683
23		-.0822375	.1036969	-0.79	0.429	-.2876996	.1232247
24		-.212223	.130234	-1.63	0.106	-.470265	.045819
_cons		.3695756	.1213133	3.05	0.003	.129209	.6099423

. est store ddd_3

.
 . reg mathzscore abc female post femalepost femaleabc abcpost abcfemalepost coho
 > rt2009 age agesq i.avc, robust cluster(codev)

Linear regression

Number of obs	=	12,840
F(32, 112)	=	18.70
Prob > F	=	0.0000
R-squared	=	0.0923
Root MSE	=	.93098

(Std. err. adjusted for 113 clusters in codevillage)

	Coefficient	Robust std. err.	t	P> t	[95% conf. interval]	
mathzscore						
abc	-.1293793	.076903	-1.68	0.095	-.2817527	.0229941
female	-.2765806	.0599122	-4.62	0.000	-.395289	-.1578723
post	.092556	.0790551	1.17	0.244	-.0640815	.2491934
femalepost	-.2368251	.0668162	-3.54	0.001	-.3692128	-.1044374
femaleabc	.0628764	.0758805	0.83	0.409	-.087471	.2132238
abcpost	.2586065	.105787	2.44	0.016	.0490032	.4682099
abcfemalepost	-.0009824	.0989681	-0.01	0.992	-.1970749	.1951102
cohort2009	.1494374	.0445541	3.35	0.001	.0611591	.2377156
age	.0029417	.0044084	0.67	0.506	-.005793	.0116765
agesq	-.000155	.0000553	-2.80	0.006	-.0002647	-.0000454
avcode						
2	-.1130366	.1483169	-0.76	0.448	-.4069076	.1808343
3	-.0650865	.1434596	-0.45	0.651	-.3493332	.2191603
4	-.32059	.1541014	-2.08	0.040	-.6259223	-.0152577
5	-.102395	.1540043	-0.66	0.507	-.4075347	.2027448
6	-.5389134	.1384046	-3.89	0.000	-.8131443	-.2646824
8	-.2825951	.1424622	-1.98	0.050	-.5648657	-.0003244
9	-.2620838	.1281553	-2.05	0.043	-.516007	-.0081606
10	-.2027223	.1692678	-1.20	0.234	-.5381047	.1326601
11	-.334637	.1284888	-2.60	0.010	-.5892212	-.0800528
12	-.3599667	.1631725	-2.21	0.029	-.6832721	-.0366613
13	-.0997032	.1360239	-0.73	0.465	-.369217	.1698107
14	-.4352235	.142908	-3.05	0.003	-.7183775	-.1520695
15	-.0892117	.2079067	-0.43	0.669	-.5011522	.3227289
16	.0661242	.1757185	0.38	0.707	-.2820394	.4142878
17	-.3059858	.1350285	-2.27	0.025	-.5735275	-.038444
18	-.2178846	.1394121	-1.56	0.121	-.4941118	.0583425
19	-.76147	.1750761	-4.35	0.000	-1.108361	-.4145791
20	-.3071111	.1751122	-1.75	0.082	-.6540735	.0398514
21	-.3587194	.1651457	-2.17	0.032	-.6859345	-.0315043

22		-.046142	.1873087	-0.25	0.806	-.4172702	.3249862
23		-.140965	.1559812	-0.90	0.368	-.4500218	.1680917
24		-.1912196	.1537583	-1.24	0.216	-.4958719	.1134327
_cons		.4109359	.1563463	2.63	0.010	.1011558	.720716

```
-----
. est store ddd_4
```

```
.
. esttab ddd_* ///
> using ../manuscript/Tables/ddd.tex, ///
> style(tex) booktabs keep(abc female post femalepost femaleabc abcpst abcfemal
> epost cohort2009 age agesq) ///
> mtitle("literacy" "math" "literacy" "math") ///
> star(* 0.1 ** 0.05 *** 0.01) ///
> se ///
> scalars("r2 R-squared") ///
> replace
(output written to ../manuscript/Tables/ddd.tex)
```

```
.
.
. log close
      name: <unnamed>
      log: C:\Users\zxuyuan\Downloads\02. Datasets\Replication_v2.log
      log type: text
closed on: 27 Mar 2024, 09:33:56
-----
```