APPENDIX

Appendix (A)

Questionnaire of household Survey
Respondent code: Date: / /2017

Ward No.:

I. Family Background

- Owner-occupancy or Home-ownership?
  1. Own 2.Rent(Hostel) 3.Squatter
- Duration of stay in Hlaing Tharya Tsp.?
  ……year/month ago

Sir	Relationship to HH head	Sex M=1 F=2	Age	Education	Occupation	Average Income (/month)	Ethnicity	Religion	Do Household Chores (Y/N)
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									

*Circle the respondent's serial number. Write the letter "H" to indicate HH Head

*Express all types of income (express if there is any financial support from family members and relatives)

- **Incidences of Diarrhea**

(i) Did any FM get diarrhoea or loose motion <u>at least three times a day</u> during the <u>last two weeks</u>?

If yes,

Age group	Male	Female
<1		
1-<5		
5-<18		
18-<64		
>=65		

(ii) How do you cure diarrhoea?

1. Traditional cure, 2. self-description, 3. Ask pharmacy, 4. See doctor 5. ……

(iii) What do you think the **causes** of diarrhoea? (Take the first answer)

II. Water

- **Drinking Water)**

2a (i). What is the main source?

1. Purified drinking water, 2. Pond, Well, Stream, Piped, 3.Rainfall, 4. Other……..

2a (ii). Is there any second source of water? Yes No

If so, what is it? Pond, Well, Stream, Piped, Rainfall, Other……..

2b ***If you use Commercial Purified Drinking Water,***

Brand Name ……..

The price of 20-litre plastic bottle ……...Ks

No. of bottles used per week for HH …… bottles

(*Not for commercial drinking water bottle user*)

2c (i). Do you make any treatment/**cleansing** method for drinking water?

Yes No

2c(ii). If yes, how? Boil, Filter, chlorinate, other……..

- **Water for General use**

2d. What is the main source?

1. Well 2. Pond, Stream, Piped 3.Rainfall 4. Other…….

Food preparation Purified bottle, well, Pond, stream, piped, rainfall, trolley vendor, other……..

The rest Purified bottle, well, Pond, stream, piped, rainfall, trolley vendor, other……..

If pond, any protection against animals, (fence)? Yes No

Is there any Water Scarcity problem? Yes No

2e ***(for squatter and rent)*** Do you have to pay for water access? Yes No

If so, How much ……Ks

Price of water per ceramic tank/plastic ...…….Ks

2f (i). Do you make any **treatment/ cleaning** to water for HH use?

Yes No

2f (ii). If yes, how Filter, boil, sediment, chlorinate, Other…….

2g Household perception on water quality

	Drinking water	Water for general use
Absolutely clean		
Clean		
Not so clean		
Very unclean		
Don't know (98)		

III. Latrine usage and Environmental sanitation

3a(i) Defecation practice

Where do your FM go to defecate?

1. Own 2. Other HH's 3. Share in Hostel 4. Public latrine 5. ……..

3a (ii). ***For those choose No.1 "Own",*** do any other people share your latrine? Yes No

3a(iii). If Yes, and ***those choosing No. 2 and 4,*** How many people share it?

……person/HH

3b. What kind of latrine is used?

1. Piped sewer, 2.septic tank, 3. ventilated improved pit latrine, *open* pit 4. Pit *with slab*, 5. composting toilet, 6.Bucket,

3c. What facilities used for cleansing?

1. Water, 2. water & soap, 3. paper, 4. water & paper

(3d) ***HH having no latrines*** **(not for those who live in hostel)**

3d. What is the <u>main reason</u> for not building and utilising the latrine?

1. I'm a squatter
   >> 3di. If you have space, will you build? Yes No
2. No space to build (squatter)
   >> 3di. If you have space, will you build? Yes No
3. Can't dig the pit (swamp, daily tide)

4. Can't dig the pit (hardness of earth)

5. Neighbors don't approve of

6. Can't afford,

>> 3dii. Express max amount you can afford to build the latrine?

……Ks

7. Other…….

3e. Do you have any plan to build one? Yes No

If yes, When? 1. three months 2. six months 3. One year 4. Two years 5. >3 years

3f. What is the **main reason** to build a latrine? Or why do you want to build?

(3g) Maintenance of Individual HH latrine

Have latrine got full? Yes No

If Yes, What do you usually do?

1.Sort yourself, 2.with municipal, 3. private service 4……

(3h) Child defecation practice

3h (i)Do you have a child of **under one year**? Yes No

3h (ii)Do you have a child of **under two years?** Yes No

If yes how does the child mostly defecate?

1. In dress 2.child bucket 3. Bathroom 4. Toilet 5. Compound 6. Other

3h (iii) How does the caregiver clean the child's bottom?

1. Water, 2. water & soap, 3.cotton pad, 4.cloth,……..

3h (iv)Where does caregiver dispose the faeces? …….

3h (v)Does she wash hands? Yes No

How does she clean hands?

1.With water, 2.with soap and water, 3.other……

3h (vi)Do you have a child of age **bet two and five?** Yes No

3h (vii)How does the child mostly defecate?

1. In dress 2.child bucket 3. Bathroom 4. Toilet 5. Compound 6. Other

3h (viii)Who clean the child's bottom? 1.Itself 2. the caregiver

If cleansing itself, how does it clean?

1.Water, 2.water and soap, 3. cotton pad, 4.cloth, 5.other……..

If the caregiver cleansing, how does the caregiver clean the child's bottom?

1.Water, 2.water and soap, 3.other……

3h (ix)How does caregiver dispose of the faeces? ***(not for toilet using)***

……

3h (x) Does she wash hands? Yes No

How does she clean hands?

1. With water, 2. with soap and water, 3. other……

IV. Hygiene

- **Hand Washing**

4a. What activities come to your mind **first** when you think of personal hygiene?

Choose. .. 1.facial clean, 2. tooth clean, 3.hand wash, 4.bath, 5.nail cut, 6.shampoo, 7.other……

4b. When do you wash your hand?

1. Before eating Yes No
2. After eating Yes No
3. After defecation Yes No
4. Before preparing food Yes No

5. After dirty work Yes No

6. …….

V. Disposal of waste

5a.Where do you dispose?

1. Private trolley collector, 2.Municipal Dustbin/car 3.back alley,

4. within compound 5. Vacant land

If use Private collector; express the amount …… Ks / Pac

5b.(Not for squatter households)

Do municipal workers work on your street? Yes No

How much do you have to pay to municipal monthly? …….per month

If Yes, How many times municipal workers collect waste? ……. per week/month

VI. Contingent valuation (willingness to pay and ability to pay)

- **Water**

1. 6a(i) Let's say public **piped** water system will be installed in Hlaing Tharya.
   Do you want to access to?
   1. Strongly agree, 2. Agree 3. Not agree, 4. Strongly not agree 5. DK

2. 6a(ii) If it makes into the situation where the drinking water can be used by this public piped water
   system (the water to be disinfected) in Hlaing Tharya.
   Do you want to access to?
   1. Strongly agree, 2. Agree 3. Not agree, 4. Strongly not agree 5. DK

   6a(iii) How much do you want to and able to contribute, via municipal tax payment (per month) for No.6a(i) case?
   ……..Ks

6a(iv) How much do you want to and able to contribute, via municipal tax payment (per month) for No.6a(ii) case?
……..Ks

6b(i). Why do you think you should pay for piped water?

6b(ii). Why do you think you should pay for piped water?

- **Waste management**

1. 6c(i) Let's say the waste collection service will be improved to the condition at downtown Yangon.
(show photos of street and back alley) Do you want?
1. strongly agree, 2. Agree, 3. Not agree, 4. Strongly not agree
5. DK

6c(ii) If yes, how much do you want to and able to contribute to public service via municipal tax (per month)?
……Ks

6c(iii) Why do you think you should pay for it?
……

VII. Health Information Source

7a. Where do you mostly get any health info? (Rank Number 1,2,3 for first **three main** sources)

Radio	Television	Internet	Newspapers	Magazines	Family	School/ Uni	Friends

VIII. Mobile phone usage

8a. Does your household have a mobile phone? Yes
No

If yes, fill the table.

Put sir no. of HH members	Type of phone (smart=1, keypad=2, sitting=3)	Internet (Y/N)	App he/she uses

Appendix (B)

Binary Logistic

Summary of dummy dependent variables used in binary logistic regressions

Variable	Obs	Mean	Std. Dev.	Min	Max
dw	402	.7338308	.4425045	0	1
cw	402	.4353234	.4964171	0	1
apn	402	.8880597	.3156859	0	1
h	402	.6691542	.471104	0	1

Summary of continuous variables in binary logistic regressions

```
. summarize inc he set
```

Variable	Obs	Mean	Std. Dev.	Min	Max
inc	402	409587.1	292331.2	20000	3000000
he	402	8.850746	2.84208	0	15
set	402	11.28358	9.28701	1	56

Logistic regression for dummy of safe drinking water or not

```
. logistic dw he ib(last).lo

Logistic regression                             Number of obs   =        402
                                                LR chi2(3)      =     205.38
                                                Prob > chi2     =     0.0000
Log likelihood =  -130.2309                     Pseudo R2       =     0.4409
```

dw	Odds Ratio	Std. Err.	z	P>|z|	[95% Conf.	Interval]
he	1.160739	.0753252	2.30	0.022	1.022107	1.318173
lo						
1	47.31903	20.56148	8.88	0.000	20.1913	110.8938
2	40.41223	16.02617	9.33	0.000	18.57608	87.91672

```
.
```

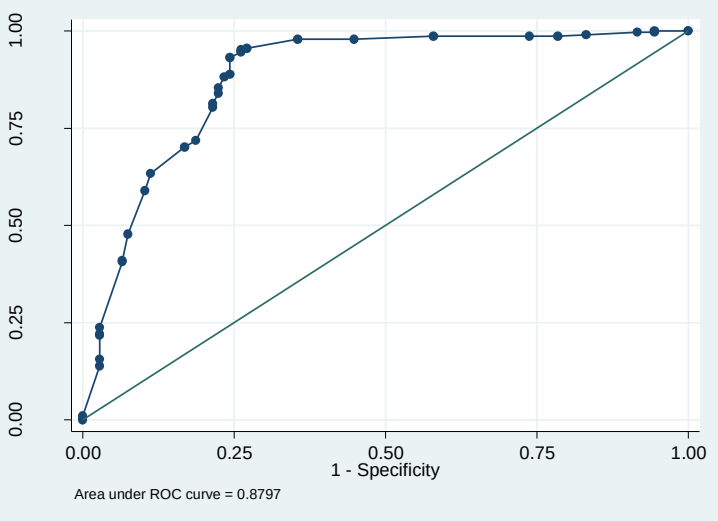
Goodness of Fit test

```
. estat gof

Logistic model for dw, goodness-of-fit test

       number of observations =       402
 number of covariate patterns =        35
            Pearson chi2(31) =     41.89
                 Prob > chi2 =    0.0917
```

AUROC curve



Logistic regression for dummy of purified water for cooking or not

```
. logistic cw he ib(last).lo

Logistic regression                                     Number of obs     =        402
                                                        LR chi2(3)        =       8.34
                                                        Prob > chi2       =     0.0394
Log likelihood = -271.10029                             Pseudo R2         =     0.0152
```

cw	Odds Ratio	Std. Err.	z	P>|z|	[95% Conf.	Interval]
he	1.074291	.0432578	1.78	0.075	.9927668	1.16251
lo						
1	.4667504	.1389831	-2.56	0.011	.2603901	.8366522
2	.5009182	.1397665	-2.48	0.013	.2899106	.8655049

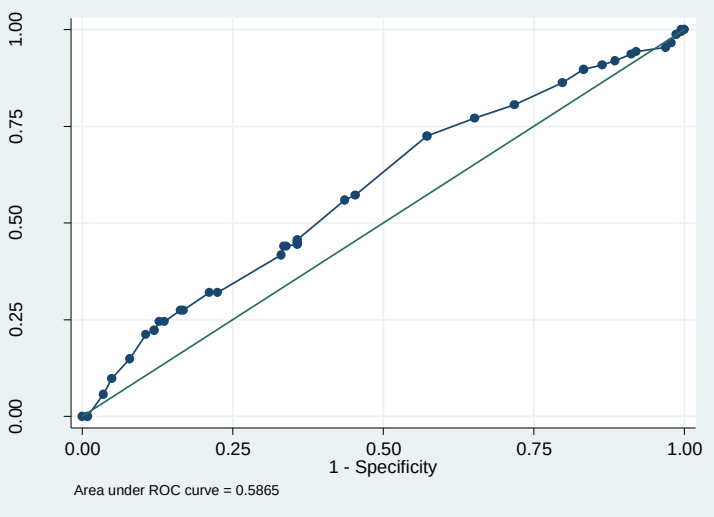
Goodness of Fit test

```
. estat gof

Logistic model for cw, goodness-of-fit test

      number of observations =       402
number of covariate patterns =        35
           Pearson chi2(31) =     33.71
                 Prob > chi2 =    0.3379
```

AUROC curve



Logistic regression for dummy of sharing latrine or not

```
. logistic h ib(last).lo inc

Logistic regression                             Number of obs   =        402
                                                LR chi2(3)      =     109.54
                                                Prob > chi2     =     0.0000
Log likelihood = -200.40987                     Pseudo R2       =     0.2146
```

h	Odds Ratio	Std. Err.	z	P>|z|	[95% Conf.	Interval]
lo						
1	2.309559	.8447784	2.29	0.022	1.127668	4.730174
2	.1752009	.052625	-5.80	0.000	.0972437	.3156539
inc	1.000001	6.54e-07	2.19	0.028	1	1.000003

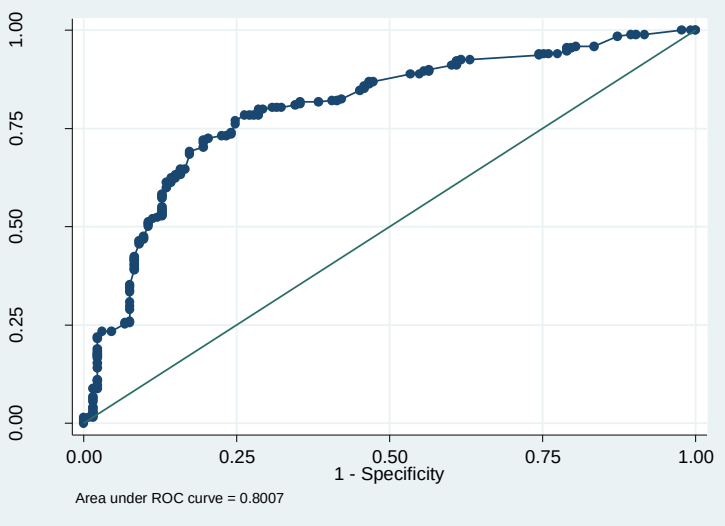
Goodness of Fit test

```
. estat gof

Logistic model for h, goodness-of-fit test

       number of observations =       402
number of covariate patterns =       153
           Pearson chi2(149) =    214.94
                 Prob > chi2 =    0.0003
```

AUROC curve



Logistic regression for dummy of appropriate waste disposal or not

```
. logit apn he set, or

Iteration 0:   log likelihood = -140.92225
Iteration 1:   log likelihood =  -128.4715
Iteration 2:   log likelihood = -126.88531
Iteration 3:   log likelihood = -126.87227
Iteration 4:   log likelihood = -126.87226

Logistic regression                             Number of obs     =        402
                                                LR chi2(2)        =      28.10
                                                Prob > chi2       =     0.0000
Log likelihood = -126.87226                     Pseudo R2         =     0.0997

------------------------------------------------------------------------------
         apn | Odds Ratio   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
          he |   1.245286   .070709     3.86   0.000     1.114132    1.391879
         set |   1.063425   .0263732    2.48   0.013     1.012971    1.116393
------------------------------------------------------------------------------
```

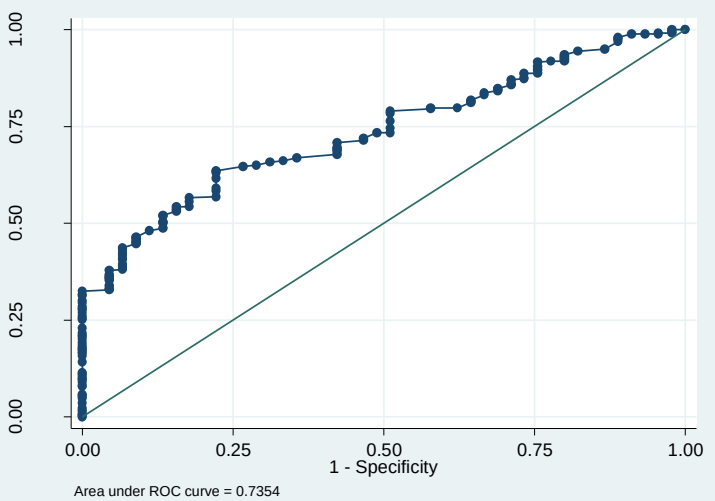
Goodness of Fit test

```
. estat gof

Logistic model for apn, goodness-of-fit test

       number of observations =       402
number of covariate patterns =       152
           Pearson chi2(149) =    152.72
                 Prob > chi2 =    0.4005
```

AUROC curve



Appendix (C)

Contingent Valuation

Summary data of variables in truncated regression for WTP of piped water

```
. summarize wtp lnwtp inc i.lo
```

Variable	Obs	Mean	Std. Dev.	Min	Max
wtp	327	4457.187	3026.245	0	15000
lnwtp	327	7.936668	1.683336	0	9.615872
inc	327	412305.8	270022.7	40000	2500000
lo					
2	327	.3700306	.4835525	0	1
3	327	.2232416	.4170572	0	1

Truncated Regression result for WTP of piped water

```
. truncreg lnwtp ib(last).lo, ll(0)
(note: 12 obs. truncated)

Fitting full model:

Iteration 0:   log likelihood =  -307.1134
Iteration 1:   log likelihood = -307.10621
Iteration 2:   log likelihood = -307.10621

Truncated regression
Limit:   lower =          0                     Number of obs     =        315
         upper =       +inf                     Wald chi2(2)      =      22.99
Log likelihood = -307.10621                     Prob > chi2       =     0.0000
```

lnwtp	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
lo						
1	-.2820711	.0949219	-2.97	0.003	-.4681146	-.0960276
2	-.4633991	.0966577	-4.79	0.000	-.6528448	-.2739534
_cons	8.524285	.0761281	111.97	0.000	8.375076	8.673493
/sigma	.6414666	.0255566	25.10	0.000	.5913765	.6915567

Wald test

```
. test 1.lo 2.lo 3.lo

 ( 1)  [eq1]1.lo = 0
 ( 2)  [eq1]2.lo = 0
 ( 3)  [eq1]3b.lo = 0
       Constraint 3 dropped

           chi2(  2) =   22.99
         Prob > chi2 =    0.0000
```

```
. test 1.lo = 2.lo = 3.lo

 ( 1)  [eq1]1.lo - [eq1]2.lo = 0
 ( 2)  [eq1]1.lo - [eq1]3b.lo = 0

           chi2(  2) =   22.99
         Prob > chi2 =    0.0000
```

Regression of squared residuals against explanatory variables

```
. predict sl, residual

.
. gen sls = sl^2

.
. reg sls i.lo
```

Source	SS	df	MS	Number of obs	=	327
				F(2, 324)	=	0.09
Model	30.3985507	2	15.1992753	Prob > F	=	0.9100
Residual	52204.2016	324	161.124079	R-squared	=	0.0006
				Adj R-squared	=	-0.0056
Total	52234.6001	326	160.228835	Root MSE	=	12.693

sls	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
lo						
2	.1381082	1.594698	0.09	0.931	-2.999162	3.275379
3	-.6516938	1.848956	-0.35	0.725	-4.289169	2.985781
_cons	2.967478	1.100663	2.70	0.007	.8021291	5.132826

Summary data of variables in truncated regression for WTP of disinfection to piped water

```
. summarize wtp lnwtp inc i.cw
```

Variable	Obs	Mean	Std. Dev.	Min	Max
wtp	298	2169.128	1921.381	0	10000
lnwtp	298	6.468672	2.781293	0	9.210441
inc	298	418922.8	274904.3	45000	2500000
1.cw	298	.4395973	.497173	0	1

Truncated Regression result for WTP of disinfection to piped water

```
. truncreg lnwtp inc i.cw, ll(0)
(note: 44 obs. truncated)

Fitting full model:

Iteration 0:   log likelihood = -274.54335
Iteration 1:   log likelihood = -274.53443
Iteration 2:   log likelihood = -274.53443

Truncated regression
Limit:   lower =          0                     Number of obs     =        254
         upper =       +inf                     Wald chi2(2)      =      16.20
Log likelihood = -274.53443                     Prob > chi2       =     0.0003
```

lnwtp	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
inc	4.87e-07	1.57e-07	3.09	0.002	1.78e-07	7.95e-07
1.cw	.2318061	.0903042	2.57	0.010	.0548131	.408799
_cons	7.280143	.0898206	81.05	0.000	7.104098	7.456188
/sigma	.713128	.0316399	22.54	0.000	.6511149	.7751412

Wald Test

```
. test inc 1.cw 0.cw

 ( 1)  [eq1]inc = 0
 ( 2)  [eq1]1.cw = 0
 ( 3)  [eq1]0b.cw = 0
       Constraint 3 dropped

           chi2(  2) =   16.20
         Prob > chi2 =    0.0003

. test inc 1.cw 0.cw

 ( 1)  [eq1]inc = 0
 ( 2)  [eq1]1.cw = 0
 ( 3)  [eq1]0b.cw = 0
       Constraint 3 dropped

           chi2(  2) =   16.20
         Prob > chi2 =    0.0003
```

Regression of Squared residuals against explanatory variables

```
. predict sl, residual

.
. gen sls = sl^2

.
. reg sls inc
```

Source	SS	df	MS	Number of obs	=	298
				F(1, 296)	=	1.75
Model	713.020841	1	713.020841	Prob > F	=	0.1867
Residual	120508.438	296	407.123102	R-squared	=	0.0059
				Adj R-squared	=	0.0025
Total	121221.459	297	408.153061	Root MSE	=	20.177

sls	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
inc	-5.64e-06	4.26e-06	-1.32	0.187	-.000014	2.75e-06
_cons	11.25138	2.132947	5.28	0.000	7.053715	15.44904

Summary data of variables in truncated regression for WTP of disinfection to piped water

```
. summarize wtp lnwtp inc i.lo
```

Variable	Obs	Mean	Std. Dev.	Min	Max
wtp	318	1506.918	1267.433	0	6000
lnwtp	318	6.371495	2.405266	0	8.699681
inc	318	418660.4	275695.2	20000	2500000
lo					
2	318	.3930818	.4892045	0	1
3	318	.1981132	.3992061	0	1

Truncated Regression result for WTP of effective solid waste disposal

```
. truncreg lnwtp ib(last).lo inc, ll(0)
(note: 37 obs. truncated)

Fitting full model:

Iteration 0:   log likelihood = -289.80879
Iteration 1:   log likelihood = -289.79443
Iteration 2:   log likelihood = -289.79442

Truncated regression
Limit:   lower =          0                     Number of obs     =        281
         upper =       +inf                     Wald chi2(3)      =      10.19
Log likelihood = -289.79442                     Prob > chi2       =     0.0171
```

lnwtp	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
lo						
1	-.2747688	.1159409	-2.37	0.018	-.5020089	-.0475287
2	-.2776606	.1133211	-2.45	0.014	-.4997659	-.0555553
inc	3.19e-07	1.50e-07	2.13	0.033	2.55e-08	6.12e-07
_cons	7.301319	.1050751	69.49	0.000	7.095376	7.507262
/sigma	.6786555	.0286274	23.71	0.000	.6225469	.7347641

Wald Test

```
. test 1.lo 2.lo 3.lo inc

 ( 1)  [eq1]1.lo = 0
 ( 2)  [eq1]2.lo = 0
 ( 3)  [eq1]3b.lo = 0
 ( 4)  [eq1]inc = 0
       Constraint 3 dropped

           chi2(  3) =   10.19
         Prob > chi2 =    0.0171

.
. test 1.lo=2.lo=3.lo = inc

 ( 1)  [eq1]1.lo - [eq1]2.lo = 0
 ( 2)  [eq1]1.lo - [eq1]3b.lo = 0
 ( 3)  [eq1]1.lo - [eq1]inc = 0
       Constraint 2 dropped

           chi2(  2) =    6.95
         Prob > chi2 =    0.0310
```

Regression of Squared residuals against explanatory variables

```
. predict sl, residual

.
. gen sls = sl^2

.
. reg sls i.lo
```

Source	SS	df	MS	Number of obs	=	318
				F(2, 315)	=	0.94
Model	525.980521	2	262.99026	Prob > F	=	0.3903
Residual	87783.0823	315	278.676452	R-squared	=	0.0060
				Adj R-squared	=	-0.0004
Total	88309.0629	317	278.577485	Root MSE	=	16.694

sls	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
lo						
2	-.3288504	2.09119	-0.16	0.875	-4.443316	3.785616
3	3.044287	2.562636	1.19	0.236	-1.997759	8.086332
_cons	6.025371	1.464126	4.12	0.000	3.144668	8.906073

Mobile Phone

Summary of variables in truncated regression for Mobile Phone Use

```
. summarize mph inc i.lo
```

Variable	Obs	Mean	Std. Dev.	Min	Max
mph	402	.5341477	.2796113	0	1
inc	402	409587.1	292331.2	20000	3000000
lo					
2	402	.3781095	.4855194	0	1
3	402	.2313433	.4222168	0	1

Regression result for mobile phone use

```
. truncreg mph ib(last).lo inc, ll(0) ul(1)
(note: 81 obs. truncated)

Fitting full model:

Iteration 0:   log likelihood =   88.03123
Iteration 1:   log likelihood =  88.379305
Iteration 2:   log likelihood =  88.379319
Iteration 3:   log likelihood =  88.379319

Truncated regression
Limit:   lower =          0                     Number of obs =    321
         upper =          1                     Wald chi2(3)  =  13.27
Log likelihood =  88.379319                     Prob > chi2   = 0.0041
```

mph	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
lo						
1	.0818359	.0304941	2.68	0.007	.0220686	.1416031
2	.0502246	.0306482	1.64	0.101	-.0098448	.1102939
inc	8.05e-08	4.24e-08	1.90	0.058	-2.62e-09	1.64e-07
_cons	.401413	.0286611	14.01	0.000	.3452382	.4575877
/sigma	.193629	.009131	21.21	0.000	.1757325	.2115254

```
. estat ic
```

Model	Obs	ll(null)	ll(model)	df	AIC	BIC
.	321	.	88.37932	5	-166.7586	-147.9014

Wald Test

```
. test 1.lo 2.lo 3.lo inc

 ( 1)  [eq1]1.lo = 0
 ( 2)  [eq1]2.lo = 0
 ( 3)  [eq1]3b.lo = 0
 ( 4)  [eq1]inc = 0
       Constraint 3 dropped

           chi2(  3) =   13.27
         Prob > chi2 =    0.0041

. test 1.lo = 2.lo = 3.lo = inc

 ( 1)  [eq1]1.lo - [eq1]2.lo = 0
 ( 2)  [eq1]1.lo - [eq1]3b.lo = 0
 ( 3)  [eq1]1.lo - [eq1]inc = 0
       Constraint 2 dropped

           chi2(  2) =    7.21
         Prob > chi2 =    0.0272
```

Calculation for R squared of Predicted and Observed outcome variables

```
. correlate p mph
(obs=402)
```

	p	mph
p	1.0000	
mph	0.2917	1.0000

```
.
. display r(rho)^2
.08508748
```

CURRICULUM VITAE

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Place of Birth Yangon, Myanmar

Education Master Degree of Economics, Chiang Mai University, Chiang Mai, Thailand.

Bachelor Degree in Pharmacy, University of Pharmacy, Yangon

Experience

- Research Assistance and interpreter in "Case study of Aquaculture and land grabbing", by Michigan State University and US aid (May-June 2017)
- Social specialist in "Unlocking the Economic Potential of Residential Buildings in Yangon's Heritage Zone" by Pyoe Pin Program, DFID and Yangon Heritage Trust. (July-Aug 2015)
- Quantitative Data Analyst in "Social Impact Assessment on Energy sector of Myanmar" by EMRef and World Bank (2015)
- Research Team Supervisor and Quantitative Data Analyst in "SWOT analysis of a political party (indescribable) for the coming 2015 election" by a political party (2014)
- Team Supervisor in external evaluation team "Monitoring and Evaluation on Livelihood Projects in Non-Delta regions" of Mercy Corps (2014)
- Assistant Researcher in "Social Impact Assessment on Decentralizing fund for stipends and small grants in Basic Education Schools" by EMRef, World Bank and Ministry of Education (Myanmar) (2014)

- Research team supervisor in Round 3 and 4, Research Assistant in Round 1 and 2 of “Qualitative Social and Economic Monitoring (QSEM) by Livelihood and Food Security (Multi-Donor Trust Fund) and World Bank (2012-2014)