ภาคผนวก ฉ

ผลการศึกษา

ตารางที่ ฉ-1

ผลการประมาณค่าแบบจำลอง Poisson

```
poisson v program sex grade sta dom ex belief  inc pv ttc t_tt t_st costt c_beer z_other2
t_other2

Iteration 0:   log likelihood = -2728.4595
Iteration 1:   log likelihood = -2707.9118
Iteration 2:   log likelihood = -2707.8069
Iteration 3:   log likelihood = -2707.8069

Poisson regression                              Number of obs   =         312
                                                LR chi2(16)     =     1871.54
                                                Prob > chi2     =      0.0000
Log likelihood = -2707.8069                     Pseudo R2       =      0.2568

------------------------------------------------------------------------------
          v  |     Coef.    Std. Err.      z     P>|z|    [95% Conf. Interval]
-------------+----------------------------------------------------------------
    program  | -.6122153   .0478042   -12.81    0.000    -.7059098   -.5185208
        sex  | -.0946098   .0389511    -2.43    0.015    -.1709527    -.018267
      grade  | -.0632803   .0397681    -1.59    0.112    -.1412243    .0146637
        sta  |  .0769079   .0562114     1.37    0.171    -.0332644    .1870801
        dom  |  .1129061   .0405919     2.78    0.005     .0333474    .1924648
         ex  |  .1841726   .0083343    22.10    0.000     .1678378    .2005075
     belief  | -.1156058   .0083492   -13.85    0.000    -.1319699   -.0992418
        inc  |  4.11e-06   5.69e-07     7.23    0.000     3.00e-06    5.23e-06
         pv  | -.0002181   .0001203    -1.81    0.070    -.0004539    .0000177
        ttc  |  .0002749   .0002735     1.01    0.315    -.0002612     .000811
       t_tt  |  -.499294   .0573647    -8.70    0.000    -.6117268   -.3868612
       t_st  |  .1915786   .0202995     9.44    0.000     .1517923    .2313649
      costt  | -5.32e-06   8.44e-07    -6.30    0.000    -6.97e-06   -3.66e-06
     c_beer  |  .0000181   1.61e-06    11.22    0.000     .0000149    .0000213
   z_other2  |  2.04e-06   3.63e-07     5.61    0.000     1.33e-06    2.75e-06
   t_other2  | -.0002584    .000027    -9.56    0.000    -.0003114   -.0002055
      _cons  |  3.307107   .1826709    18.10    0.000     2.949079    3.665135
------------------------------------------------------------------------------
```

ตารางที่ ฉ- 2

ผลการศึกษาค่า Marginal Effect ของนักศึกษาชายโครงการภาคภาษาไทย

```
mfx ,at(mean sex=1 program=1 dom=1 sta=1)

Marginal effects after poisson
     y = predicted number of events (predict)
       =   8.782847
------------------------------------------------------------------------------
variable |      dy/dx    Std. Err.      z    P>|z|  [     95% C.I.    ]      X
---------+--------------------------------------------------------------------
program*|  -7.417229     .75429     -9.83   0.000   -8.8956  -5.93885        1
    sex*|  -.8715208     .35848     -2.43   0.015   -1.57413 -.168914        1
   grade |  -.5557815     .34981     -1.59   0.112   -1.2414   .129836  2.84212
    sta*|   .6501488     .46008      1.41   0.158   -.251582  1.55188        1
    dom*|   .9377046     .33251      2.82   0.005    .285993  1.58942        1
     ex  |   1.61756      .07602     21.28   0.000    1.46857  1.76655  2.75962
  belief |  -1.015348     .07264    -13.98   0.000   -1.15771 -.872981  5.17949
     inc |   .0000361     .00001      7.01   0.000    .000026  .000046  64401.9
      pv |  -.0019158     .00105     -1.82   0.069   -.003982   .00015  366.275
     ttc |   .0024145     .00241      1.00   0.316   -.002309  .007138  88.5439
    t_tt |  -4.385223     .48363     -9.07   0.000   -5.33312 -3.43733  .730004
    t_st |   1.682606     .18191      9.25   0.000    1.32607  2.03914   3.553
   costt |  -.0000467     .00001     -6.24   0.000   -.000061 -.000032  47913.9
  c_beer |   .0001591     .00001     10.97   0.000    .000131  .000187  2480.15
 z_othe~8 |   .0000179     .00000      5.40   0.000    .000011  .000024   33390
 t_other2 |  -.0022699     .00024     -9.59   0.000   -.002734 -.001806  2827.45
------------------------------------------------------------------------------
(*) dy/dx is for discrete change of dummy variable from 0 to 1
```

ตารางที่ ฉ- 3

ผลการศึกษาค่า Marginal Effect ของนักศึกษาชายโครงการภาคภาษาอังกฤษ

```
mfx ,at(mean sex=1 program=0 dom=1 sta=1)

Marginal effects after poisson
      y  = predicted number of events (predict)
         =  16.200076
------------------------------------------------------------------------------
variable |      dy/dx    Std. Err.      z    P>|z|  [    95% C.I.    ]      X
---------+--------------------------------------------------------------------
program*|  -7.417229      .75429    -9.83   0.000   -8.8956  -5.93885        0
    sex*|  -1.607532      .67322    -2.39   0.017   -2.92702  -.288044       1
   grade |  -1.025146       .6429    -1.59   0.111    -2.2852   .234911  2.84212
    sta*|   1.199208      .84621     1.42   0.156    -.459325  2.85774       1
    dom*|   1.729608      .64067     2.70   0.007     .473911  2.98531       1
      ex |   2.983611      .18385    16.23   0.000     2.62328  3.34395  2.75962
  belief |  -1.872823      .15393   -12.17   0.000   -2.17451 -1.57113  5.17949
     inc |   .0000667       .00001    7.19   0.000     .000048   .000085  64401.9
      pv |  -.0035337       .00197   -1.79   0.073    -.007392   .000325  366.275
     ttc |   .0044536       .00443    1.00   0.315    -.004238   .013146  88.5439
    t_tt |  -8.088601      .99317    -8.14   0.000   -10.0352  -6.14203  .730004
    t_st |   3.103588      .39761     7.81   0.000     2.32428   3.88289    3.553
   costt |  -.0000861       .00001   -5.92   0.000    -.000115  -.000058  47913.9
  c_beer |   .0002934       .00003   10.48   0.000     .000239   .000348  2480.15
z_othe~8 |    .000033       .00001    5.20   0.000     .000021   .000045    33390
 t_other2 |  -.0041869       .00046   -9.08   0.000    -.005091  -.003283  2827.45
------------------------------------------------------------------------------
(*) dy/dx is for discrete change of dummy variable from 0 to 1
```

ตารางที่ ฉ-4

ผลการศึกษาค่า Marginal Effect ของนักศึกษาหญิงโครงการภาคภาษาไทย

```
mfx ,at(mean sex=0 program=1 dom=1 sta=1)

Marginal effects after poisson
     y  = predicted number of events (predict)
        =  9.6543679
--------------------------------------------------------------------------
variable |      dy/dx   Std. Err.      z    P>|z|  [    95% C.I.    ]      X
---------+----------------------------------------------------------------
program* |  -8.153239    .86081     -9.47   0.000  -9.84039  -6.46609      1
    sex* |  -.8715208    .35848     -2.43   0.015  -1.57413  -.168914      0
   grade |  -.6109316     .3843     -1.59   0.112  -1.36414   .142275   2.84212
    sta* |   .714663     .50823      1.41   0.160  -.281451   1.71078      1
    dom* |  1.030753     .36988      2.79   0.005   .305803    1.7557      1
      ex |   1.77807     .10245     17.36   0.000   1.57727   1.97887   2.75962
  belief |  -1.116101    .08467    -13.18   0.000  -1.28205  -.950152   5.17949
     inc |   .0000397    .00001      7.19   0.000    .000029   .000051   64401.9
      pv |  -.0021059    .00116     -1.81   0.070   -.004381   .000169   366.275
     ttc |   .0026541    .00265      1.00   0.317   -.002544   .007853   88.5439
    t_tt |  -4.820368    .53912     -8.94   0.000  -5.87702  -3.76372   .730004
    t_st |  1.849571     .20023      9.24   0.000   1.45713   2.24201    3.553
   costt |  -.0000513    .00001     -6.20   0.000   -.000068  -.000035   47913.9
  c_beer |   .0001749    .00002     10.23   0.000    .000141   .000208   2480.15
 z_othe~8 |   .0000197    .00000      5.59   0.000    .000013   .000027    33390
 t_other2 |  -.0024951    .00027     -9.21   0.000   -.003026  -.001964   2827.45
--------------------------------------------------------------------------
(*) dy/dx is for discrete change of dummy variable from 0 to 1
```

ตารางที่ ฉ- 5

ผลการศึกษาค่า Marginal Effect ของนักศึกษาหญิงโครงการภาคภาษาอังกฤษ

```
mfx ,at(mean sex=0 program=0 dom=1 sta=1)

Marginal effects after poisson
      y  = predicted number of events (predict)
         =  17.807607
------------------------------------------------------------------------
variable |      dy/dx   Std. Err.      z    P>|z|  [    95% C.I.    ]      X
---------+--------------------------------------------------------------
program* |  -8.153239     .86081    -9.47   0.000  -9.84039 -6.46609      0
    sex* |  -1.607532     .67322    -2.39   0.017  -2.92702 -.288044      0
   grade |  -1.126871     .70666    -1.59   0.111  -2.51189  .258151  2.84212
    sta* |   1.318205      .9352     1.41   0.159  -.514753  3.15116      1
    dom* |   1.901237     .71306     2.67   0.008   .503674   3.2988      1
      ex |   3.279674     .23964    13.69   0.000   2.80999  3.74936  2.75962
  belief |  -2.058663     .18208   -11.31   0.000  -2.41553 -1.70179  5.17949
     inc |   .0000733      .00001    7.30   0.000   .000054  .000093  64401.9
      pv |  -.0038843      .00217    -1.79   0.073  -.008136  .000368  366.275
     ttc |   .0048956      .00488     1.00   0.316  -.004672  .014463  88.5439
    t_tt |  -8.891232    1.11947    -7.94   0.000  -11.0854 -6.69711  .730004
    t_st |   3.411557      .4432     7.70   0.000    2.5429  4.28022    3.553
   costt |  -.0000947      .00002    -5.84   0.000  -.000126 -.000063  47913.9
  c_beer |   .0003225      .00003     9.63   0.000   .000257  .000388  2480.15
z_othe~8 |   .0000363      .00001     5.34   0.000   .000023   .00005    33390
 t_other2|  -.0046023      .00053    -8.61   0.000   -.00565 -.003554  2827.45
------------------------------------------------------------------------
(*) dy/dx is for discrete change of dummy variable from 0 to 1
```

ตารางที่ ฉ- 6

ผลการประมาณค่าแบบจำลองการประมาณค่าด้วยวิธีความน่าจะเป็นสูงสุด

```
ml model d0 mle_1 (v = program sex grade sta dom ex belief inc pv ttc t_tt t_st
costt c_beer z_other2 t_other2) /s

ml max

initial:      log likelihood =      -<inf>  (could not be evaluated)
feasible:     log likelihood = -281358.45
rescale:      log likelihood =  -1353.069
rescale eq:   log likelihood =  -1353.069
Iteration 0:  log likelihood =  -1353.069
Iteration 1:  log likelihood = -1301.2333
Iteration 2:  log likelihood = -1291.5886
Iteration 3:  log likelihood =  -1291.564
Iteration 4:  log likelihood =  -1291.564
```

```
                                        Number of obs    =        312
                                        Wald chi2(16)    =     114.46
Log likelihood =  -1291.564             Prob > chi2      =     0.0000
```

v	Coef.	Std. Err.	z	P>|z|	[95% Conf. Interval]	
eq1						
program	-7.527872	2.67888	-2.81	0.005	-12.77838	-2.277364
sex	-1.050771	1.934996	-0.54	0.587	-4.843294	2.741752
grade	.3519506	2.219819	0.16	0.874	-3.998814	4.702716
sta	.4516989	2.838517	0.16	0.874	-5.111692	6.01509
dom	.6303185	2.041297	0.31	0.757	-3.37055	4.631187
ex	2.349776	.4550328	5.16	0.000	1.457928	3.241623
belief	-1.488547	.4608856	-3.23	0.001	-2.391867	-.5852282
inc	.000056	.0000327	1.71	0.087	-8.09e-06	.0001201
pv	-.0012581	.0059508	-0.21	0.833	-.0129215	.0104053
ttc	-.0022699	.0147225	-0.15	0.877	-.0311255	.0265857
t_tt	-4.329307	2.339459	-1.85	0.064	-8.914563	.2559488
t_st	3.793012	1.23855	3.06	0.002	1.365499	6.220525
costt	-.0000676	.0000501	-1.35	0.177	-.0001658	.0000306
c_beer	.0004575	.0001334	3.43	0.001	.0001961	.0007189
z_other2	.0000254	.0000226	1.12	0.262	-.0000189	.0000697
t_other2	-.0031929	.0012853	-2.48	0.013	-.005712	-.0006738
_cons	15.36305	9.856252	1.56	0.119	-3.954852	34.68095
s						
_cons	15.1908	.6081186	24.98	0.000	13.99891	16.38269

หมายเหตุ Distribution Function คือ Normal Distribution

ผลการวิเคราะห์สหสัมพันธ์ของตัวแปรที่ใช้ในการศึกษา

```
corr v program sex grade sta dom ex belief  inc pv ttc t_tt t_st costt c_beer
z_other2 t_other2
(obs=312)

             |        v  program      sex    grade   sta      dom       ex   belief
-------------+------------------------------------------------------------------------
           v |   1.0000
     program |  -0.1359   1.0000
         sex |   0.1677  -0.0558   1.0000
       grade |  -0.0622   0.0492  -0.0569   1.0000
         sta |   0.0119  -0.0486   0.0749   0.0333   1.0000
         dom |   0.0295   0.3387   0.1184   0.0521   0.0045   1.0000
          ex |   0.3587  -0.1171   0.3182  -0.0927  -0.0781   0.0120   1.0000
      belief |  -0.1905  -0.0596  -0.1577  -0.0294  -0.0687  -0.1273  -0.0433   1.0000
         inc |   0.1429  -0.2247   0.0123   0.0776   0.0806  -0.0067   0.1408  -0.0080
          pv |   0.0623  -0.2328   0.0006  -0.0766   0.0098  -0.2756   0.1412   0.0335
         ttc |   0.0503  -0.2273  -0.0220  -0.0763  -0.0864  -0.3438   0.1287   0.0201
        t_tt |  -0.0613  -0.2497  -0.0488  -0.0526   0.0116  -0.4020   0.0722   0.1012
        t_st |   0.2156   0.1161   0.0774  -0.0804   0.0381  -0.1040   0.1038  -0.0963
       costt |   0.1288  -0.2791   0.0906   0.0377   0.0568  -0.0464   0.2342  -0.0506
      c_beer |   0.2973  -0.0507   0.2439  -0.1437   0.0240  -0.0051   0.2941  -0.0395
     z_other2 |   0.0316  -0.0160  -0.1193  -0.0440  -0.0655  -0.0555  -0.0882  -0.0400
     t_other2 |  -0.1490   0.0199  -0.1614   0.1074   0.0064  -0.1054  -0.0880  -0.0498
```

ตาราง ฉ.7 (ต่อ)

```
             |      inc        pv       ttc      t_tt      t_st     costt   c_beer  z_othe~8
-------------+------------------------------------------------------------------------------
         inc |   1.0000
          pv |   0.1373    1.0000
         ttc |   0.1172    0.5109    1.0000
        t_tt |   0.0838    0.3956    0.4281    1.0000
        t_st |   0.0465    0.2356    0.2843    0.0893    1.0000
       costt |   0.4719    0.1447    0.2046    0.0766    0.0826    1.0000
      c_beer |   0.0767    0.1240    0.0507    0.0124    0.2100    0.2330    1.0000
     z_other2|  -0.0495   -0.0004    0.0718    0.0322    0.0784    0.0159   -0.0180    1.0000
     t_other2|   0.0038    0.0589    0.0459    0.0297   -0.0196   -0.0118   -0.0358    0.0762

             | t_other2
-------------+---------
     t_other2|   1.0000
```