# RPL and Latent class modelling bovines and ovines

**Bovines:**

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|-> CALC;Ran(12345)$

|-> NLOGIT

;lhs=choice

;choices=alt1,alt2,alt3

;rpl

;fcn=bcl[n],bss[n],bsos[n],bcost[n]

;Halton

;pds=4

;pts=1000

;Model:

U(alt1)=bcl\*cl+bss\*ss+bsos\*sos+bcost\*cost/

U(alt2)=bcl\*cl+bss\*ss+bsos\*sos+bcost\*cost/

U(alt3)=sq+bcl\*cl+bss\*ss+bsos\*sos+bcost\*cost$

Normal exit: 5 iterations. Status=0, F= 412.0972

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Start values obtained using MNL model

Dependent variable Choice

Log likelihood function -412.09718

Estimation based on N = 468, K = 5

Inf.Cr.AIC = 834.2 AIC/N = 1.782

Model estimated: Jan 21, 2016, 12:54:07

R2=1-LogL/LogL\* Log-L fncn R-sqrd R2Adj

Constants only -506.1469 .1858 .1779

Response data are given as ind. choices

Number of obs.= 468, skipped 0 obs

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| Standard Prob. 95% Confidence

CHOICE| Coefficient Error z |z|>Z\* Interval

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BCL| -.27848\*\*\* .06637 -4.20 .0000 -.40856 -.14839

BSS| .06783 .07783 .87 .3834 -.08470 .22037

BSOS| -.40329\*\*\* .07787 -5.18 .0000 -.55592 -.25066

BCOST| .00292\*\*\* .00026 11.12 .0000 .00240 .00343

SQ| 1.06306\*\*\* .17480 6.08 .0000 .72046 1.40567

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Note: \*\*\*, \*\*, \* ==> Significance at 1%, 5%, 10% level.

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Normal exit: 29 iterations. Status=0, F= 375.2526

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Random Parameters Logit Model

Dependent variable CHOICE

Log likelihood function -375.25265

Restricted log likelihood -514.15055

Chi squared [ 9 d.f.] 277.79581

Significance level .00000

McFadden Pseudo R-squared .2701503

Estimation based on N = 468, K = 9

Inf.Cr.AIC = 768.5 AIC/N = 1.642

Model estimated: Jan 21, 2016, 12:59:11

R2=1-LogL/LogL\* Log-L fncn R-sqrd R2Adj

No coefficients -514.1506 .2702 .2631

Constants only -506.1469 .2586 .2514

At start values -412.0972 .0894 .0806

Response data are given as ind. choices

Replications for simulated probs. =1000

Halton sequences used for simulations

RPL model with panel has 117 groups

Fixed number of obsrvs./group= 4

Number of obs.= 468, skipped 0 obs

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| Standard Prob. 95% Confidence

CHOICE| Coefficient Error z |z|>Z\* Interval

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|Random parameters in utility functions

BCL| -.79958\*\*\* .16150 -4.95 .0000 -1.11611 -.48305

BSS| -.19232 .17026 -1.13 .2587 -.52603 .14138

BSOS| -.50106\*\* .19635 -2.55 .0107 -.88590 -.11622

BCOST| .00499\*\*\* .00066 7.52 .0000 .00369 .00629

|Nonrandom parameters in utility functions

SQ| 2.38098\*\*\* .38526 6.18 .0000 1.62589 3.13608

|Distns. of RPs. Std.Devs or limits of triangular

NsBCL| .45475 .30867 1.47 .1407 -.15023 1.05973

NsBSS| .92163\*\*\* .23244 3.97 .0001 .46607 1.37720

NsBSOS| 1.55269\*\*\* .26369 5.89 .0000 1.03586 2.06951

NsBCOST| .00209\*\*\* .00048 4.37 .0000 .00115 .00303

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Note: \*\*\*, \*\*, \* ==> Significance at 1%, 5%, 10% level.

**Bovines with Covariates:**

CALC;Ran(12345)$

|-> NLOGIT

;lhs=choice

;choices=alt1,alt2,alt3

;rpl=amed,benefit1,benefit3,age1,age3,edu1,edu3,tin1

;fcn=bcl(n|#00000000),bss(n|#10000000),bsos(n|#00000000),bcost(n|#10100000)

;Halton

;pds=4

;pts=1000

;Model:

U(alt1)=bcl\*cl+bss\*ss+bsos\*sos+bcost\*cost/

U(alt2)=bcl\*cl+bss\*ss+bsos\*sos+bcost\*cost/

U(alt3)=sq+bcl\*cl+bss\*ss+bsos\*sos+bcost\*cost$

+------------------------------------------------------+

|WARNING: Bad observations were found in the sample. |

|Found 4 bad observations among 468 individuals. |

|You can use ;CheckData to get a list of these points. |

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Normal exit: 5 iterations. Status=0, F= 408.7487

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Start values obtained using MNL model

Dependent variable Choice

Log likelihood function -408.74870

Estimation based on N = 464, K = 5

Inf.Cr.AIC = 827.5 AIC/N = 1.783

Model estimated: Jan 21, 2016, 18:06:02

R2=1-LogL/LogL\* Log-L fncn R-sqrd R2Adj

Constants only -502.2141 .1861 .1754

Response data are given as ind. choices

Number of obs.= 468, skipped 4 obs

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| Standard Prob. 95% Confidence

CHOICE| Coefficient Error z |z|>Z\* Interval

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BCL| -.29384\*\*\* .06712 -4.38 .0000 -.42540 -.16228

BSS| .03950 .07907 .50 .6174 -.11548 .19447

BSOS| -.37997\*\*\* .07868 -4.83 .0000 -.53418 -.22577

BCOST| .00289\*\*\* .00026 10.98 .0000 .00238 .00341

SQ| 1.07449\*\*\* .17584 6.11 .0000 .72986 1.41913

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Note: \*\*\*, \*\*, \* ==> Significance at 1%, 5%, 10% level.

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Normal exit: 19 iterations. Status=0, F= 364.0847

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Random Parameters Logit Model

Dependent variable CHOICE

Log likelihood function -364.08469

Restricted log likelihood -509.75610

Chi squared [ 12 d.f.] 291.34283

Significance level .00000

McFadden Pseudo R-squared .2857669

Estimation based on N = 464, K = 12

Inf.Cr.AIC = 752.2 AIC/N = 1.621

Model estimated: Jan 21, 2016, 18:09:39

R2=1-LogL/LogL\* Log-L fncn R-sqrd R2Adj

No coefficients -509.7561 .2858 .2764

Constants only -502.2141 .2750 .2655

At start values -385.2549 .0550 .0426

Response data are given as ind. choices

Replications for simulated probs. =1000

Halton sequences used for simulations

RPL model with panel has 117 groups

Fixed number of obsrvs./group= 4

Number of obs.= 468, skipped 4 obs

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| Standard Prob. 95% Confidence

CHOICE| Coefficient Error z |z|>Z\* Interval

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|Random parameters in utility functions

BCL| -.76322\*\*\* .15820 -4.82 .0000 -1.07328 -.45315

BSS| .07498 .19944 .38 .7070 -.31591 .46587

BSOS| -.43925\*\* .18755 -2.34 .0192 -.80684 -.07167

BCOST| .00500\*\*\* .00071 7.03 .0000 .00361 .00640

|Nonrandom parameters in utility functions

SQ| 2.30947\*\*\* .38409 6.01 .0000 1.55667 3.06226

|Heterogeneity in mean, Parameter:Variable

BCL:AME| 0.0 .....(Fixed Parameter).....

BCL:BEN| 0.0 .....(Fixed Parameter).....

BCL0:BEN| 0.0 .....(Fixed Parameter).....

BCL:AGE| 0.0 .....(Fixed Parameter).....

BCL0:AGE| 0.0 .....(Fixed Parameter).....

BCL:EDU| 0.0 .....(Fixed Parameter).....

BCL0:EDU| 0.0 .....(Fixed Parameter).....

BCL:TIN| 0.0 .....(Fixed Parameter).....

BSS:AME| -.74129\*\* .31319 -2.37 .0179 -1.35514 -.12744

BSS:BEN| 0.0 .....(Fixed Parameter).....

BSS0:BEN| 0.0 .....(Fixed Parameter).....

BSS:AGE| 0.0 .....(Fixed Parameter).....

BSS0:AGE| 0.0 .....(Fixed Parameter).....

BSS:EDU| 0.0 .....(Fixed Parameter).....

BSS0:EDU| 0.0 .....(Fixed Parameter).....

BSS:TIN| 0.0 .....(Fixed Parameter).....

BSOS:AME| 0.0 .....(Fixed Parameter).....

BSOS:BEN| 0.0 .....(Fixed Parameter).....

BSO0:BEN| 0.0 .....(Fixed Parameter).....

BSOS:AGE| 0.0 .....(Fixed Parameter).....

BSO0:AGE| 0.0 .....(Fixed Parameter).....

BSOS:EDU| 0.0 .....(Fixed Parameter).....

BSO0:EDU| 0.0 .....(Fixed Parameter).....

BSOS:TIN| 0.0 .....(Fixed Parameter).....

BCOS:AME| -.00132\*\* .00061 -2.16 .0307 -.00251 -.00012

BCOS:BEN| 0.0 .....(Fixed Parameter).....

BCO0:BEN| .00322\*\*\* .00113 2.86 .0043 .00101 .00543

BCOS:AGE| 0.0 .....(Fixed Parameter).....

BCO0:AGE| 0.0 .....(Fixed Parameter).....

BCOS:EDU| 0.0 .....(Fixed Parameter).....

BCO0:EDU| 0.0 .....(Fixed Parameter).....

BCOS:TIN| 0.0 .....(Fixed Parameter).....

|Distns. of RPs. Std.Devs or limits of triangular

NsBCL| .46467 .28675 1.62 .1051 -.09735 1.02668

NsBSS| .84017\*\*\* .22429 3.75 .0002 .40056 1.27978

NsBSOS| 1.44207\*\*\* .25772 5.60 .0000 .93695 1.94719

NsBCOST| .00179\*\*\* .00046 3.91 .0001 .00089 .00269

**Sheep RPL model:**

|-> CALC;Ran(12345)$

|-> NLOGIT

;lhs=choice

;choices=alt1,alt2,alt3

;rpl

;fcn=bcl[n],bss[n],bsos[n],bcost[n]

;Halton

;pds=4

;pts=100

;Model:

U(alt1)=bcl\*cl+bss\*ss+bsos\*sos+bcost\*cost/

U(alt2)=bcl\*cl+bss\*ss+bsos\*sos+bcost\*cost/

U(alt3)=sq+bcl\*cl+bss\*ss+bsos\*sos+bcost\*cost$

Normal exit: 5 iterations. Status=0, F= 273.1932

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Start values obtained using MNL model

Dependent variable Choice

Log likelihood function -273.19321

Estimation based on N = 324, K = 5

Inf.Cr.AIC = 556.4 AIC/N = 1.717

Model estimated: Jan 21, 2016, 15:43:07

R2=1-LogL/LogL\* Log-L fncn R-sqrd R2Adj

Constants only -347.1816 .2131 .2020

Response data are given as ind. choices

Number of obs.= 324, skipped 0 obs

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| Standard Prob. 95% Confidence

CHOICE| Coefficient Error z |z|>Z\* Interval

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BCL| -.47738\*\*\* .08947 -5.34 .0000 -.65274 -.30203

BSS| -.23923\*\* .11079 -2.16 .0308 -.45638 -.02209

BSOS| -.29663\*\*\* .10514 -2.82 .0048 -.50269 -.09056

BCOST| .05477\*\*\* .00677 8.09 .0000 .04151 .06803

SQ| .98557\*\*\* .22452 4.39 .0000 .54551 1.42563

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Note: \*\*\*, \*\*, \* ==> Significance at 1%, 5%, 10% level.

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Normal exit: 25 iterations. Status=0, F= 250.1140

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Random Parameters Logit Model

Dependent variable CHOICE

Log likelihood function -250.11397

Restricted log likelihood -355.95038

Chi squared [ 9 d.f.] 211.67282

Significance level .00000

McFadden Pseudo R-squared .2973347

Estimation based on N = 324, K = 9

Inf.Cr.AIC = 518.2 AIC/N = 1.599

Model estimated: Jan 21, 2016, 15:43:23

R2=1-LogL/LogL\* Log-L fncn R-sqrd R2Adj

No coefficients -355.9504 .2973 .2874

Constants only -347.1816 .2796 .2694

At start values -273.1932 .0845 .0716

Response data are given as ind. choices

Replications for simulated probs. = 100

Halton sequences used for simulations

RPL model with panel has 81 groups

Fixed number of obsrvs./group= 4

Number of obs.= 324, skipped 0 obs

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| Standard Prob. 95% Confidence

CHOICE| Coefficient Error z |z|>Z\* Interval

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|Random parameters in utility functions

BCL| -1.01026\*\*\* .22492 -4.49 .0000 -1.45110 -.56941

BSS| -.55693\*\*\* .18932 -2.94 .0033 -.92799 -.18587

BSOS| -.49556\*\* .24458 -2.03 .0427 -.97492 -.01619

BCOST| .09388\*\*\* .01619 5.80 .0000 .06214 .12561

|Nonrandom parameters in utility functions

SQ| 2.30088\*\*\* .47710 4.82 .0000 1.36578 3.23598

|Distns. of RPs. Std.Devs or limits of triangular

NsBCL| .70632\*\* .28053 2.52 .0118 .15649 1.25614

NsBSS| .43735 .30882 1.42 .1567 -.16792 1.04262

NsBSOS| 1.59288\*\*\* .32284 4.93 .0000 .96012 2.22564

NsBCOST| .02758\*\* .01166 2.36 .0180 .00472 .05045

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Note: \*\*\*, \*\*, \* ==> Significance at 1%, 5%, 10% level.

**Sheep RPL with covariates**

CALC;Ran(12345)$

|-> NLOGIT

;lhs=choice

;choices=alt1,alt2,alt3

;rpl=amed,benefit1,benefit3,age1,age2,edu1,edu3,tin1

;fcn=bcl(n|#00000000),bss(n|#10000001),bsos(n|#01000000),bcost(n|#11000000)

;Halton

;pds=4

;pts=1000

;Model:

U(alt1)=bcl\*cl+bss\*ss+bsos\*sos+bcost\*cost/

U(alt2)=bcl\*cl+bss\*ss+bsos\*sos+bcost\*cost/

U(alt3)=sq+bcl\*cl+bss\*ss+bsos\*sos+bcost\*cost$

Normal exit: 5 iterations. Status=0, F= 273.1932

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Start values obtained using MNL model

Dependent variable Choice

Log likelihood function -273.19321

Estimation based on N = 324, K = 5

Inf.Cr.AIC = 556.4 AIC/N = 1.717

Model estimated: Jan 22, 2016, 12:16:16

R2=1-LogL/LogL\* Log-L fncn R-sqrd R2Adj

Constants only -347.1816 .2131 .1957

Response data are given as ind. choices

Number of obs.= 324, skipped 0 obs

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| Standard Prob. 95% Confidence

CHOICE| Coefficient Error z |z|>Z\* Interval

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BCL| -.47738\*\*\* .08947 -5.34 .0000 -.65274 -.30203

BSS| -.23923\*\* .11079 -2.16 .0308 -.45638 -.02209

BSOS| -.29663\*\*\* .10514 -2.82 .0048 -.50269 -.09056

BCOST| .05477\*\*\* .00677 8.09 .0000 .04151 .06803

SQ| .98557\*\*\* .22452 4.39 .0000 .54551 1.42563

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Note: \*\*\*, \*\*, \* ==> Significance at 1%, 5%, 10% level.

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Line search at iteration 35 does not improve fn. Exiting optimization.

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Random Parameters Logit Model

Dependent variable CHOICE

Log likelihood function -226.01301

Restricted log likelihood -355.95038

Chi squared [ 14 d.f.] 259.87474

Significance level .00000

McFadden Pseudo R-squared .3650435

Estimation based on N = 324, K = 14

Inf.Cr.AIC = 480.0 AIC/N = 1.482

Model estimated: Jan 22, 2016, 12:23:15

R2=1-LogL/LogL\* Log-L fncn R-sqrd R2Adj

No coefficients -355.9504 .3650 .3510

Constants only -347.1816 .3490 .3346

At start values -273.1932 .1727 .1544

Response data are given as ind. choices

Replications for simulated probs. =1000

Halton sequences used for simulations

RPL model with panel has 81 groups

Fixed number of obsrvs./group= 4

Number of obs.= 324, skipped 0 obs

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| Standard Prob. 95% Confidence

CHOICE| Coefficient Error z |z|>Z\* Interval

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|Random parameters in utility functions

BCL| -1.00802\*\*\* .20713 -4.87 .0000 -1.41399 -.60206

BSS| .01746 .23761 .07 .9414 -.44825 .48317

BSOS| 1.45732\*\*\* .44770 3.26 .0011 .57984 2.33480

BCOST| .13654\*\*\* .02353 5.80 .0000 .09042 .18267

|Nonrandom parameters in utility functions

SQ| 2.20079\*\*\* .43385 5.07 .0000 1.35046 3.05111

|Heterogeneity in mean, Parameter:Variable

BCL:AME| 0.0 .....(Fixed Parameter).....

BCL:BEN| 0.0 .....(Fixed Parameter).....

BCL0:BEN| 0.0 .....(Fixed Parameter).....

BCL:AGE| 0.0 .....(Fixed Parameter).....

BCL0:AGE| 0.0 .....(Fixed Parameter).....

BCL:EDU| 0.0 .....(Fixed Parameter).....

BCL0:EDU| 0.0 .....(Fixed Parameter).....

BCL:TIN| 0.0 .....(Fixed Parameter).....

BSS:AME| -.74595\*\* .32238 -2.31 .0207 -1.37781 -.11409

BSS:BEN| 0.0 .....(Fixed Parameter).....

BSS0:BEN| 0.0 .....(Fixed Parameter).....

BSS:AGE| 0.0 .....(Fixed Parameter).....

BSS0:AGE| 0.0 .....(Fixed Parameter).....

BSS:EDU| 0.0 .....(Fixed Parameter).....

BSS0:EDU| 0.0 .....(Fixed Parameter).....

BSS:TIN| -.65755\*\* .31668 -2.08 .0379 -1.27823 -.03687

BSOS:AME| 0.0 .....(Fixed Parameter).....

BSOS:BEN| -2.44437\*\*\* .54296 -4.50 .0000 -3.50854 -1.38019

BSO0:BEN| 0.0 .....(Fixed Parameter).....

BSOS:AGE| 0.0 .....(Fixed Parameter).....

BSO0:AGE| 0.0 .....(Fixed Parameter).....

BSOS:EDU| 0.0 .....(Fixed Parameter).....

BSO0:EDU| 0.0 .....(Fixed Parameter).....

BSOS:TIN| 0.0 .....(Fixed Parameter).....

BCOS:AME| -.03103\*\* .01292 -2.40 .0163 -.05634 -.00572

BCOS:BEN| -.04364\*\*\* .01648 -2.65 .0081 -.07594 -.01134

BCO0:BEN| 0.0 .....(Fixed Parameter).....

BCOS:AGE| 0.0 .....(Fixed Parameter).....

BCO0:AGE| 0.0 .....(Fixed Parameter).....

BCOS:EDU| 0.0 .....(Fixed Parameter).....

BCO0:EDU| 0.0 .....(Fixed Parameter).....

BCOS:TIN| 0.0 .....(Fixed Parameter).....

|Distns. of RPs. Std.Devs or limits of triangular

NsBCL| .71685\*\*\* .26129 2.74 .0061 .20474 1.22895

NsBSS| .00324 1.09645 .00 .9976 -2.14577 2.15224

NsBSOS| 1.17993\*\*\* .26547 4.44 .0000 .65963 1.70023

NsBCOST| .02147\* .01245 1.72 .0846 -.00293 .04586

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Note: \*\*\*, \*\*, \* ==> Significance at 1%, 5%, 10% level.

Fixed parameter ... is constrained to equal the value or

had a nonpositive st.error because of an earlier problem.

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Note: \*\*\*, \*\*, \* ==> Significance at 1%, 5%, 10% level.

Fixed parameter ... is constrained to equal the value or

had a nonpositive st.error because of an earlier problem.

**Latent class modelling sheep:**

**AMED**

|-> CALC;Ran(12345)$

|-> LCLOGIT

;lhs=choice

;choices=alt1,alt2,alt3

;LCM=AMED

;pds=4

;pts=2

;Model:

U(alt1)=bcl\*cl+bss\*ss+bsos\*sos+bcost\*cost/

U(alt2)=bcl\*cl+bss\*ss+bsos\*sos+bcost\*cost/

U(alt3)=sq+bcl\*cl+bss\*ss+bsos\*sos+bcost\*cost$

Normal exit: 5 iterations. Status=0, F= 273.1932

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Discrete choice (multinomial logit) model

Dependent variable Choice

Log likelihood function -273.19321

Estimation based on N = 324, K = 5

Inf.Cr.AIC = 556.4 AIC/N = 1.717

Model estimated: Jan 21, 2016, 18:39:37

R2=1-LogL/LogL\* Log-L fncn R-sqrd R2Adj

Constants only -347.1816 .2131 .1983

Response data are given as ind. choices

Number of obs.= 324, skipped 0 obs

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| Standard Prob. 95% Confidence

CHOICE| Coefficient Error z |z|>Z\* Interval

--------+--------------------------------------------------------------------

BCL|1| -.47738\*\*\* .08947 -5.34 .0000 -.65274 -.30203

BSS|1| -.23923\*\* .11079 -2.16 .0308 -.45638 -.02209

BSOS|1| -.29663\*\*\* .10514 -2.82 .0048 -.50269 -.09056

BCOST|1| .05477\*\*\* .00677 8.09 .0000 .04151 .06803

SQ|1| .98557\*\*\* .22452 4.39 .0000 .54551 1.42563

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Note: \*\*\*, \*\*, \* ==> Significance at 1%, 5%, 10% level.

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Normal exit: 38 iterations. Status=0, F= 243.0053

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Latent Class Logit Model

Dependent variable CHOICE

Log likelihood function -243.00525

Restricted log likelihood -355.95038

Chi squared [ 12 d.f.] 225.89026

Significance level .00000

McFadden Pseudo R-squared .3173058

Estimation based on N = 324, K = 12

Inf.Cr.AIC = 510.0 AIC/N = 1.574

Model estimated: Jan 21, 2016, 18:39:38

R2=1-LogL/LogL\* Log-L fncn R-sqrd R2Adj

No coefficients -355.9504 .3173 .3044

Constants only -347.1816 .3001 .2869

At start values -273.1989 .1105 .0937

Response data are given as ind. choices

Number of latent classes = 2

Average Class Probabilities

.358 .642

LCM model with panel has 81 groups

Fixed number of obsrvs./group= 4

Number of obs.= 324, skipped 0 obs

--------+--------------------------------------------------------------------

| Standard Prob. 95% Confidence

CHOICE| Coefficient Error z |z|>Z\* Interval

--------+--------------------------------------------------------------------

|Utility parameters in latent class -->> 1

BCL|1| -.57117\* .33095 -1.73 .0844 -1.21982 .07748

BSS|1| -.49263 .36027 -1.37 .1715 -1.19874 .21348

BSOS|1| -2.58130\*\*\* .72087 -3.58 .0003 -3.99418 -1.16842

BCOST|1| .09936\*\*\* .03023 3.29 .0010 .04011 .15860

SQ|1| 3.81723\*\*\* .97393 3.92 .0001 1.90837 5.72609

|Utility parameters in latent class -->> 2

BCL|2| -.60959\*\*\* .11841 -5.15 .0000 -.84167 -.37752

BSS|2| -.27800 .18815 -1.48 .1395 -.64676 .09077

BSOS|2| .32884\* .18281 1.80 .0721 -.02947 .68715

BCOST|2| .05761\*\*\* .01039 5.55 .0000 .03725 .07796

SQ|2| .47940 .41680 1.15 .2501 -.33751 1.29631

|This is THETA(01) in class probability model.

Constant| -.80486\* .44469 -1.81 .0703 -1.67644 .06672

\_AMED|1| .53050 .67842 .78 .4342 -.79919 1.86018

|This is THETA(02) in class probability model.

Constant| 0.0 .....(Fixed Parameter).....

\_AMED|2| 0.0 .....(Fixed Parameter).....

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**Benefit 1:**

-> CALC;Ran(12345)$

|-> LCLOGIT

;lhs=choice

;choices=alt1,alt2,alt3

;LCM=benefit1

;pds=4

;pts=2

;Model:

U(alt1)=bcl\*cl+bss\*ss+bsos\*sos+bcost\*cost/

U(alt2)=bcl\*cl+bss\*ss+bsos\*sos+bcost\*cost/

U(alt3)=sq+bcl\*cl+bss\*ss+bsos\*sos+bcost\*cost$

Normal exit: 5 iterations. Status=0, F= 273.1932

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Discrete choice (multinomial logit) model

Dependent variable Choice

Log likelihood function -273.19321

Estimation based on N = 324, K = 5

Inf.Cr.AIC = 556.4 AIC/N = 1.717

Model estimated: Jan 21, 2016, 18:41:32

R2=1-LogL/LogL\* Log-L fncn R-sqrd R2Adj

Constants only -347.1816 .2131 .1983

Response data are given as ind. choices

Number of obs.= 324, skipped 0 obs

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| Standard Prob. 95% Confidence

CHOICE| Coefficient Error z |z|>Z\* Interval

--------+--------------------------------------------------------------------

BCL|1| -.47738\*\*\* .08947 -5.34 .0000 -.65274 -.30203

BSS|1| -.23923\*\* .11079 -2.16 .0308 -.45638 -.02209

BSOS|1| -.29663\*\*\* .10514 -2.82 .0048 -.50269 -.09056

BCOST|1| .05477\*\*\* .00677 8.09 .0000 .04151 .06803

SQ|1| .98557\*\*\* .22452 4.39 .0000 .54551 1.42563

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Note: \*\*\*, \*\*, \* ==> Significance at 1%, 5%, 10% level.

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Line search at iteration 56 does not improve fn. Exiting optimization.

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Latent Class Logit Model

Dependent variable CHOICE

Log likelihood function -232.53272

Restricted log likelihood -355.95038

Chi squared [ 12 d.f.] 246.83531

Significance level .00000

McFadden Pseudo R-squared .3467271

Estimation based on N = 324, K = 12

Inf.Cr.AIC = 489.1 AIC/N = 1.509

Model estimated: Jan 21, 2016, 18:41:33

R2=1-LogL/LogL\* Log-L fncn R-sqrd R2Adj

No coefficients -355.9504 .3467 .3344

Constants only -347.1816 .3302 .3176

At start values -273.1989 .1489 .1328

Response data are given as ind. choices

Number of latent classes = 2

Average Class Probabilities

.526 .474

LCM model with panel has 81 groups

Fixed number of obsrvs./group= 4

Number of obs.= 324, skipped 0 obs

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| Standard Prob. 95% Confidence

CHOICE| Coefficient Error z |z|>Z\* Interval

--------+--------------------------------------------------------------------

|Utility parameters in latent class -->> 1

BCL|1| -.77415\*\*\* .22836 -3.39 .0007 -1.22173 -.32657

BSS|1| -.52390\*\* .21971 -2.38 .0171 -.95454 -.09327

BSOS|1| -1.35802\*\*\* .28386 -4.78 .0000 -1.91438 -.80165

BCOST|1| .06734\*\*\* .01298 5.19 .0000 .04190 .09278

SQ|1| 2.11136\*\*\* .42167 5.01 .0000 1.28491 2.93782

|Utility parameters in latent class -->> 2

BCL|2| -.67004\*\*\* .16504 -4.06 .0000 -.99351 -.34657

BSS|2| -.19264 .24377 -.79 .4294 -.67043 .28515

BSOS|2| .64070\*\*\* .22794 2.81 .0049 .19395 1.08744

BCOST|2| .06874\*\*\* .01423 4.83 .0000 .04085 .09663

SQ|2| .64903 .49241 1.32 .1875 -.31607 1.61413

|This is THETA(01) in class probability model.

Constant| -33.7794 .6027D+07 .00 1.0000 \*\*\*\*\*\*\*\*\*\*\* \*\*\*\*\*\*\*\*\*\*\*

\_BENEF|1| 34.5660 .6027D+07 .00 1.0000 \*\*\*\*\*\*\*\*\*\*\* \*\*\*\*\*\*\*\*\*\*\*

|This is THETA(02) in class probability model.

Constant| 0.0 .....(Fixed Parameter).....

\_BENEF|2| 0.0 .....(Fixed Parameter).....

--------+--------------------------------------------------------------------

**Benefit 2:**

|-> CALC;Ran(12345)$

|-> LCLOGIT

;lhs=choice

;choices=alt1,alt2,alt3

;LCM=benefit2

;pds=4

;pts=2

;Model:

U(alt1)=bcl\*cl+bss\*ss+bsos\*sos+bcost\*cost/

U(alt2)=bcl\*cl+bss\*ss+bsos\*sos+bcost\*cost/

U(alt3)=sq+bcl\*cl+bss\*ss+bsos\*sos+bcost\*cost$

Normal exit: 5 iterations. Status=0, F= 273.1932

-----------------------------------------------------------------------------

Discrete choice (multinomial logit) model

Dependent variable Choice

Log likelihood function -273.19321

Estimation based on N = 324, K = 5

Inf.Cr.AIC = 556.4 AIC/N = 1.717

Model estimated: Jan 21, 2016, 18:43:18

R2=1-LogL/LogL\* Log-L fncn R-sqrd R2Adj

Constants only -347.1816 .2131 .1983

Response data are given as ind. choices

Number of obs.= 324, skipped 0 obs

--------+--------------------------------------------------------------------

| Standard Prob. 95% Confidence

CHOICE| Coefficient Error z |z|>Z\* Interval

--------+--------------------------------------------------------------------

BCL|1| -.47738\*\*\* .08947 -5.34 .0000 -.65274 -.30203

BSS|1| -.23923\*\* .11079 -2.16 .0308 -.45638 -.02209

BSOS|1| -.29663\*\*\* .10514 -2.82 .0048 -.50269 -.09056

BCOST|1| .05477\*\*\* .00677 8.09 .0000 .04151 .06803

SQ|1| .98557\*\*\* .22452 4.39 .0000 .54551 1.42563

--------+--------------------------------------------------------------------

Note: \*\*\*, \*\*, \* ==> Significance at 1%, 5%, 10% level.

-----------------------------------------------------------------------------

Line search at iteration 64 does not improve fn. Exiting optimization.

-----------------------------------------------------------------------------

Latent Class Logit Model

Dependent variable CHOICE

Log likelihood function -238.90850

Restricted log likelihood -355.95038

Chi squared [ 12 d.f.] 234.08375

Significance level .00000

McFadden Pseudo R-squared .3288151

Estimation based on N = 324, K = 12

Inf.Cr.AIC = 501.8 AIC/N = 1.549

Model estimated: Jan 21, 2016, 18:43:18

R2=1-LogL/LogL\* Log-L fncn R-sqrd R2Adj

No coefficients -355.9504 .3288 .3162

Constants only -347.1816 .3119 .2989

At start values -273.1989 .1255 .1090

Response data are given as ind. choices

Number of latent classes = 2

Average Class Probabilities

.401 .599

LCM model with panel has 81 groups

Fixed number of obsrvs./group= 4

Number of obs.= 324, skipped 0 obs

--------+--------------------------------------------------------------------

| Standard Prob. 95% Confidence

CHOICE| Coefficient Error z |z|>Z\* Interval

--------+--------------------------------------------------------------------

|Utility parameters in latent class -->> 1

BCL|1| -.63573 .41050 -1.55 .1215 -1.44030 .16884

BSS|1| -.52784 .39002 -1.35 .1759 -1.29227 .23659

BSOS|1| -2.03000\*\* .83500 -2.43 .0151 -3.66656 -.39343

BCOST|1| .08366\*\* .03495 2.39 .0167 .01517 .15216

SQ|1| 3.04811\*\* 1.30390 2.34 .0194 .49251 5.60371

|Utility parameters in latent class -->> 2

BCL|2| -.63260\*\*\* .13385 -4.73 .0000 -.89494 -.37026

BSS|2| -.29790 .20834 -1.43 .1527 -.70623 .11043

BSOS|2| .42308\* .21893 1.93 .0533 -.00602 .85218

BCOST|2| .05780\*\*\* .01221 4.73 .0000 .03386 .08174

SQ|2| .43881 .45238 .97 .3320 -.44784 1.32546

|This is THETA(01) in class probability model.

Constant| -.17070 .39637 -.43 .6667 -.94756 .60617

\_BENEF|1| -33.8362 .8300D+07 .00 1.0000 \*\*\*\*\*\*\*\*\*\*\* \*\*\*\*\*\*\*\*\*\*\*

|This is THETA(02) in class probability model.

Constant| 0.0 .....(Fixed Parameter).....

\_BENEF|2| 0.0 .....(Fixed Parameter).....

--------+--------------------------------------------------------------------

**Age 1:**

|-> CALC;Ran(12345)$

|-> LCLOGIT

;lhs=choice

;choices=alt1,alt2,alt3

;LCM=age1

;pds=4

;pts=2

;Model:

U(alt1)=bcl\*cl+bss\*ss+bsos\*sos+bcost\*cost/

U(alt2)=bcl\*cl+bss\*ss+bsos\*sos+bcost\*cost/

U(alt3)=sq+bcl\*cl+bss\*ss+bsos\*sos+bcost\*cost$

Normal exit: 5 iterations. Status=0, F= 273.1932

-----------------------------------------------------------------------------

Discrete choice (multinomial logit) model

Dependent variable Choice

Log likelihood function -273.19321

Estimation based on N = 324, K = 5

Inf.Cr.AIC = 556.4 AIC/N = 1.717

Model estimated: Jan 21, 2016, 18:44:38

R2=1-LogL/LogL\* Log-L fncn R-sqrd R2Adj

Constants only -347.1816 .2131 .1983

Response data are given as ind. choices

Number of obs.= 324, skipped 0 obs

--------+--------------------------------------------------------------------

| Standard Prob. 95% Confidence

CHOICE| Coefficient Error z |z|>Z\* Interval

--------+--------------------------------------------------------------------

BCL|1| -.47738\*\*\* .08947 -5.34 .0000 -.65274 -.30203

BSS|1| -.23923\*\* .11079 -2.16 .0308 -.45638 -.02209

BSOS|1| -.29663\*\*\* .10514 -2.82 .0048 -.50269 -.09056

BCOST|1| .05477\*\*\* .00677 8.09 .0000 .04151 .06803

SQ|1| .98557\*\*\* .22452 4.39 .0000 .54551 1.42563

--------+--------------------------------------------------------------------

Note: \*\*\*, \*\*, \* ==> Significance at 1%, 5%, 10% level.

-----------------------------------------------------------------------------

Normal exit: 49 iterations. Status=0, F= 243.4703

-----------------------------------------------------------------------------

Latent Class Logit Model

Dependent variable CHOICE

Log likelihood function -243.47033

Restricted log likelihood -355.95038

Chi squared [ 12 d.f.] 224.96011

Significance level .00000

McFadden Pseudo R-squared .3159993

Estimation based on N = 324, K = 12

Inf.Cr.AIC = 510.9 AIC/N = 1.577

Model estimated: Jan 21, 2016, 18:44:38

R2=1-LogL/LogL\* Log-L fncn R-sqrd R2Adj

No coefficients -355.9504 .3160 .3031

Constants only -347.1816 .2987 .2855

At start values -273.1989 .1088 .0920

Response data are given as ind. choices

Number of latent classes = 2

Average Class Probabilities

.376 .624

LCM model with panel has 81 groups

Fixed number of obsrvs./group= 4

Number of obs.= 324, skipped 0 obs

--------+--------------------------------------------------------------------

| Standard Prob. 95% Confidence

CHOICE| Coefficient Error z |z|>Z\* Interval

--------+--------------------------------------------------------------------

|Utility parameters in latent class -->> 1

BCL|1| -.53175\* .31495 -1.69 .0913 -1.14903 .08554

BSS|1| -.43335 .33538 -1.29 .1963 -1.09068 .22397

BSOS|1| -2.40419\*\*\* .70143 -3.43 .0006 -3.77897 -1.02941

BCOST|1| .10032\*\*\* .03011 3.33 .0009 .04130 .15933

SQ|1| 3.66955\*\*\* .99174 3.70 .0002 1.72577 5.61333

|Utility parameters in latent class -->> 2

BCL|2| -.61430\*\*\* .12136 -5.06 .0000 -.85216 -.37645

BSS|2| -.29053 .19508 -1.49 .1364 -.67288 .09182

BSOS|2| .36166\* .19090 1.89 .0582 -.01249 .73581

BCOST|2| .05687\*\*\* .01093 5.20 .0000 .03544 .07829

SQ|2| .41102 .44226 .93 .3527 -.45580 1.27784

|This is THETA(01) in class probability model.

Constant| -.49882 .32439 -1.54 .1241 -1.13462 .13697

\_AGE1|1| -.06532 .88654 -.07 .9413 -1.80291 1.67227

|This is THETA(02) in class probability model.

Constant| 0.0 .....(Fixed Parameter).....

\_AGE1|2| 0.0 .....(Fixed Parameter).....

--------+--------------------------------------------------------------------

Note: \*\*\*, \*\*, \* ==> Significance at 1%, 5%, 10% level.

Fixed parameter ... is constrained to equal the value or

had a nonpositive st.error because of an earlier problem.

**Age 2:**

|-> CALC;Ran(12345)$

|-> LCLOGIT

;lhs=choice

;choices=alt1,alt2,alt3

;LCM=age2

;pds=4

;pts=2

;Model:

U(alt1)=bcl\*cl+bss\*ss+bsos\*sos+bcost\*cost/

U(alt2)=bcl\*cl+bss\*ss+bsos\*sos+bcost\*cost/

U(alt3)=sq+bcl\*cl+bss\*ss+bsos\*sos+bcost\*cost$

Normal exit: 5 iterations. Status=0, F= 273.1932

-----------------------------------------------------------------------------

Discrete choice (multinomial logit) model

Dependent variable Choice

Log likelihood function -273.19321

Estimation based on N = 324, K = 5

Inf.Cr.AIC = 556.4 AIC/N = 1.717

Model estimated: Jan 21, 2016, 18:45:30

R2=1-LogL/LogL\* Log-L fncn R-sqrd R2Adj

Constants only -347.1816 .2131 .1983

Response data are given as ind. choices

Number of obs.= 324, skipped 0 obs

--------+--------------------------------------------------------------------

| Standard Prob. 95% Confidence

CHOICE| Coefficient Error z |z|>Z\* Interval

--------+--------------------------------------------------------------------

BCL|1| -.47738\*\*\* .08947 -5.34 .0000 -.65274 -.30203

BSS|1| -.23923\*\* .11079 -2.16 .0308 -.45638 -.02209

BSOS|1| -.29663\*\*\* .10514 -2.82 .0048 -.50269 -.09056

BCOST|1| .05477\*\*\* .00677 8.09 .0000 .04151 .06803

SQ|1| .98557\*\*\* .22452 4.39 .0000 .54551 1.42563

--------+--------------------------------------------------------------------

Note: \*\*\*, \*\*, \* ==> Significance at 1%, 5%, 10% level.

-----------------------------------------------------------------------------

Normal exit: 35 iterations. Status=0, F= 242.4696

-----------------------------------------------------------------------------

Latent Class Logit Model

Dependent variable CHOICE

Log likelihood function -242.46957

Restricted log likelihood -355.95038

Chi squared [ 12 d.f.] 226.96163

Significance level .00000

McFadden Pseudo R-squared .3188108

Estimation based on N = 324, K = 12

Inf.Cr.AIC = 508.9 AIC/N = 1.571

Model estimated: Jan 21, 2016, 18:45:30

R2=1-LogL/LogL\* Log-L fncn R-sqrd R2Adj

No coefficients -355.9504 .3188 .3060

Constants only -347.1816 .3016 .2884

At start values -273.1989 .1125 .0957

Response data are given as ind. choices

Number of latent classes = 2

Average Class Probabilities

.381 .619

LCM model with panel has 81 groups

Fixed number of obsrvs./group= 4

Number of obs.= 324, skipped 0 obs

--------+--------------------------------------------------------------------

| Standard Prob. 95% Confidence

CHOICE| Coefficient Error z |z|>Z\* Interval

--------+--------------------------------------------------------------------

|Utility parameters in latent class -->> 1

BCL|1| -.50589\* .28692 -1.76 .0779 -1.06825 .05646

BSS|1| -.38739 .30341 -1.28 .2017 -.98207 .20728

BSOS|1| -2.41093\*\*\* .72607 -3.32 .0009 -3.83400 -.98787

BCOST|1| .10433\*\*\* .03177 3.28 .0010 .04205 .16660

SQ|1| 3.72251\*\*\* 1.02899 3.62 .0003 1.70572 5.73929

|Utility parameters in latent class -->> 2

BCL|2| -.61582\*\*\* .12413 -4.96 .0000 -.85911 -.37254

BSS|2| -.30944 .19637 -1.58 .1151 -.69431 .07543

BSOS|2| .37820\* .19357 1.95 .0507 -.00120 .75759

BCOST|2| .05551\*\*\* .01081 5.14 .0000 .03433 .07669

SQ|2| .37024 .42441 .87 .3830 -.46160 1.20207

|This is THETA(01) in class probability model.

Constant| -.13626 .40648 -.34 .7375 -.93295 .66042

\_AGE2|1| -.72322 .54947 -1.32 .1881 -1.80016 .35372

|This is THETA(02) in class probability model.

Constant| 0.0 .....(Fixed Parameter).....

\_AGE2|2| 0.0 .....(Fixed Parameter).....

**Edu 1:**

|-> CALC;Ran(12345)$

|-> LCLOGIT

;lhs=choice

;choices=alt1,alt2,alt3

;LCM=edu1

;pds=4

;pts=2

;Model:

U(alt1)=bcl\*cl+bss\*ss+bsos\*sos+bcost\*cost/

U(alt2)=bcl\*cl+bss\*ss+bsos\*sos+bcost\*cost/

U(alt3)=sq+bcl\*cl+bss\*ss+bsos\*sos+bcost\*cost$

Normal exit: 5 iterations. Status=0, F= 273.1932

-----------------------------------------------------------------------------

Discrete choice (multinomial logit) model

Dependent variable Choice

Log likelihood function -273.19321

Estimation based on N = 324, K = 5

Inf.Cr.AIC = 556.4 AIC/N = 1.717

Model estimated: Jan 21, 2016, 18:47:09

R2=1-LogL/LogL\* Log-L fncn R-sqrd R2Adj

Constants only -347.1816 .2131 .1983

Response data are given as ind. choices

Number of obs.= 324, skipped 0 obs

--------+--------------------------------------------------------------------

| Standard Prob. 95% Confidence

CHOICE| Coefficient Error z |z|>Z\* Interval

--------+--------------------------------------------------------------------

BCL|1| -.47738\*\*\* .08947 -5.34 .0000 -.65274 -.30203

BSS|1| -.23923\*\* .11079 -2.16 .0308 -.45638 -.02209

BSOS|1| -.29663\*\*\* .10514 -2.82 .0048 -.50269 -.09056

BCOST|1| .05477\*\*\* .00677 8.09 .0000 .04151 .06803

SQ|1| .98557\*\*\* .22452 4.39 .0000 .54551 1.42563

--------+--------------------------------------------------------------------

Note: \*\*\*, \*\*, \* ==> Significance at 1%, 5%, 10% level.

-----------------------------------------------------------------------------

Normal exit: 31 iterations. Status=0, F= 241.1176

-----------------------------------------------------------------------------

Latent Class Logit Model

Dependent variable CHOICE

Log likelihood function -241.11765

Restricted log likelihood -355.95038

Chi squared [ 12 d.f.] 229.66547

Significance level .00000

McFadden Pseudo R-squared .3226088

Estimation based on N = 324, K = 12

Inf.Cr.AIC = 506.2 AIC/N = 1.562

Model estimated: Jan 21, 2016, 18:47:09

R2=1-LogL/LogL\* Log-L fncn R-sqrd R2Adj

No coefficients -355.9504 .3226 .3098

Constants only -347.1816 .3055 .2924

At start values -273.1989 .1174 .1008

Response data are given as ind. choices

Number of latent classes = 2

Average Class Probabilities

.455 .545

LCM model with panel has 81 groups

Fixed number of obsrvs./group= 4

Number of obs.= 324, skipped 0 obs

--------+--------------------------------------------------------------------

| Standard Prob. 95% Confidence

CHOICE| Coefficient Error z |z|>Z\* Interval

--------+--------------------------------------------------------------------

|Utility parameters in latent class -->> 1

BCL|1| -.76982\*\* .32222 -2.39 .0169 -1.40135 -.13829

BSS|1| -.59453\* .32685 -1.82 .0689 -1.23513 .04608

BSOS|1| -1.64101\*\*\* .41959 -3.91 .0001 -2.46339 -.81863

BCOST|1| .07011\*\*\* .01740 4.03 .0001 .03601 .10421

SQ|1| 2.42265\*\*\* .58045 4.17 .0000 1.28499 3.56031

|Utility parameters in latent class -->> 2

BCL|2| -.62882\*\*\* .14674 -4.29 .0000 -.91643 -.34121

BSS|2| -.28178 .22601 -1.25 .2125 -.72475 .16118

BSOS|2| .53451\*\* .24620 2.17 .0299 .05196 1.01706

BCOST|2| .06332\*\*\* .01407 4.50 .0000 .03574 .09089

SQ|2| .56666 .56521 1.00 .3161 -.54112 1.67445

|This is THETA(01) in class probability model.

Constant| -.82371\* .45867 -1.80 .0725 -1.72268 .07527

\_EDU1|1| 1.37501\*\* .56815 2.42 .0155 .26147 2.48856

|This is THETA(02) in class probability model.

Constant| 0.0 .....(Fixed Parameter).....

\_EDU1|2| 0.0 .....(Fixed Parameter).....

**Edu 3:**

|-> CALC;Ran(12345)$

|-> LCLOGIT

;lhs=choice

;choices=alt1,alt2,alt3

;LCM=edu3

;pds=4

;pts=2

;Model:

U(alt1)=bcl\*cl+bss\*ss+bsos\*sos+bcost\*cost/

U(alt2)=bcl\*cl+bss\*ss+bsos\*sos+bcost\*cost/

U(alt3)=sq+bcl\*cl+bss\*ss+bsos\*sos+bcost\*cost$

Normal exit: 5 iterations. Status=0, F= 273.1932

-----------------------------------------------------------------------------

Discrete choice (multinomial logit) model

Dependent variable Choice

Log likelihood function -273.19321

Estimation based on N = 324, K = 5

Inf.Cr.AIC = 556.4 AIC/N = 1.717

Model estimated: Jan 21, 2016, 18:47:41

R2=1-LogL/LogL\* Log-L fncn R-sqrd R2Adj

Constants only -347.1816 .2131 .1983

Response data are given as ind. choices

Number of obs.= 324, skipped 0 obs

--------+--------------------------------------------------------------------

| Standard Prob. 95% Confidence

CHOICE| Coefficient Error z |z|>Z\* Interval

--------+--------------------------------------------------------------------

BCL|1| -.47738\*\*\* .08947 -5.34 .0000 -.65274 -.30203

BSS|1| -.23923\*\* .11079 -2.16 .0308 -.45638 -.02209

BSOS|1| -.29663\*\*\* .10514 -2.82 .0048 -.50269 -.09056

BCOST|1| .05477\*\*\* .00677 8.09 .0000 .04151 .06803

SQ|1| .98557\*\*\* .22452 4.39 .0000 .54551 1.42563

--------+--------------------------------------------------------------------

Note: \*\*\*, \*\*, \* ==> Significance at 1%, 5%, 10% level.

-----------------------------------------------------------------------------

Normal exit: 46 iterations. Status=0, F= 243.3569

-----------------------------------------------------------------------------

Latent Class Logit Model

Dependent variable CHOICE

Log likelihood function -243.35690

Restricted log likelihood -355.95038

Chi squared [ 12 d.f.] 225.18697

Significance level .00000

McFadden Pseudo R-squared .3163179

Estimation based on N = 324, K = 12

Inf.Cr.AIC = 510.7 AIC/N = 1.576

Model estimated: Jan 21, 2016, 18:47:41

R2=1-LogL/LogL\* Log-L fncn R-sqrd R2Adj

No coefficients -355.9504 .3163 .3034

Constants only -347.1816 .2991 .2858

At start values -273.1989 .1092 .0924

Response data are given as ind. choices

Number of latent classes = 2

Average Class Probabilities

.373 .627

LCM model with panel has 81 groups

Fixed number of obsrvs./group= 4

Number of obs.= 324, skipped 0 obs

--------+--------------------------------------------------------------------

| Standard Prob. 95% Confidence

CHOICE| Coefficient Error z |z|>Z\* Interval

--------+--------------------------------------------------------------------

|Utility parameters in latent class -->> 1

BCL|1| -.55351 .35729 -1.55 .1213 -1.25378 .14677

BSS|1| -.45981 .37418 -1.23 .2191 -1.19319 .27358

BSOS|1| -2.40082\*\*\* .73076 -3.29 .0010 -3.83308 -.96855

BCOST|1| .09793\*\*\* .03293 2.97 .0029 .03338 .16247

SQ|1| 3.62144\*\*\* 1.07746 3.36 .0008 1.50967 5.73322

|Utility parameters in latent class -->> 2

BCL|2| -.61645\*\*\* .12320 -5.00 .0000 -.85791 -.37499

BSS|2| -.28982 .19541 -1.48 .1380 -.67281 .09317

BSOS|2| .36169\* .18987 1.90 .0568 -.01045 .73384

BCOST|2| .05728\*\*\* .01076 5.33 .0000 .03620 .07836

SQ|2| .44200 .42293 1.05 .2960 -.38691 1.27092

|This is THETA(01) in class probability model.

Constant| -.48445 .31017 -1.56 .1183 -1.09238 .12347

\_EDU3|1| -.58640 1.44763 -.41 .6854 -3.42371 2.25091

|This is THETA(02) in class probability model.

Constant| 0.0 .....(Fixed Parameter).....

\_EDU3|2| 0.0 .....(Fixed Parameter).....

**Tin 1:**

|-> CALC;Ran(12345)$

|-> LCLOGIT

;lhs=choice

;choices=alt1,alt2,alt3

;LCM=tin1

;pds=4

;pts=2

;Model:

U(alt1)=bcl\*cl+bss\*ss+bsos\*sos+bcost\*cost/

U(alt2)=bcl\*cl+bss\*ss+bsos\*sos+bcost\*cost/

U(alt3)=sq+bcl\*cl+bss\*ss+bsos\*sos+bcost\*cost$

Normal exit: 5 iterations. Status=0, F= 273.1932

-----------------------------------------------------------------------------

Discrete choice (multinomial logit) model

Dependent variable Choice

Log likelihood function -273.19321

Estimation based on N = 324, K = 5

Inf.Cr.AIC = 556.4 AIC/N = 1.717

Model estimated: Jan 21, 2016, 18:48:30

R2=1-LogL/LogL\* Log-L fncn R-sqrd R2Adj

Constants only -347.1816 .2131 .1983

Response data are given as ind. choices

Number of obs.= 324, skipped 0 obs

--------+--------------------------------------------------------------------

| Standard Prob. 95% Confidence

CHOICE| Coefficient Error z |z|>Z\* Interval

--------+--------------------------------------------------------------------

BCL|1| -.47738\*\*\* .08947 -5.34 .0000 -.65274 -.30203

BSS|1| -.23923\*\* .11079 -2.16 .0308 -.45638 -.02209

BSOS|1| -.29663\*\*\* .10514 -2.82 .0048 -.50269 -.09056

BCOST|1| .05477\*\*\* .00677 8.09 .0000 .04151 .06803

SQ|1| .98557\*\*\* .22452 4.39 .0000 .54551 1.42563

--------+--------------------------------------------------------------------

Note: \*\*\*, \*\*, \* ==> Significance at 1%, 5%, 10% level.

-----------------------------------------------------------------------------

Normal exit: 35 iterations. Status=0, F= 243.4429

-----------------------------------------------------------------------------

Latent Class Logit Model

Dependent variable CHOICE

Log likelihood function -243.44293

Restricted log likelihood -355.95038

Chi squared [ 12 d.f.] 225.01490

Significance level .00000

McFadden Pseudo R-squared .3160762

Estimation based on N = 324, K = 12

Inf.Cr.AIC = 510.9 AIC/N = 1.577

Model estimated: Jan 21, 2016, 18:48:30

R2=1-LogL/LogL\* Log-L fncn R-sqrd R2Adj

No coefficients -355.9504 .3161 .3032

Constants only -347.1816 .2988 .2856

At start values -273.1989 .1089 .0921

Response data are given as ind. choices

Number of latent classes = 2

Average Class Probabilities

.377 .623

LCM model with panel has 81 groups

Fixed number of obsrvs./group= 4

Number of obs.= 324, skipped 0 obs

--------+--------------------------------------------------------------------

| Standard Prob. 95% Confidence

CHOICE| Coefficient Error z |z|>Z\* Interval

--------+--------------------------------------------------------------------

|Utility parameters in latent class -->> 1

BCL|1| -.54255\* .31937 -1.70 .0894 -1.16850 .08340

BSS|1| -.44467 .34350 -1.29 .1955 -1.11791 .22858

BSOS|1| -2.37885\*\*\* .71606 -3.32 .0009 -3.78230 -.97540

BCOST|1| .09874\*\*\* .03059 3.23 .0012 .03880 .15869

SQ|1| 3.61976\*\*\* 1.02416 3.53 .0004 1.61243 5.62708

|Utility parameters in latent class -->> 2

BCL|2| -.61513\*\*\* .12187 -5.05 .0000 -.85398 -.37627

BSS|2| -.29006 .19668 -1.47 .1403 -.67555 .09543

BSOS|2| .36504\* .19132 1.91 .0564 -.00993 .74001

BCOST|2| .05706\*\*\* .01093 5.22 .0000 .03563 .07849

SQ|2| .41997 .42944 .98 .3281 -.42171 1.26166

|This is THETA(01) in class probability model.

Constant| -.55707 .38868 -1.43 .1518 -1.31887 .20472

\_TIN1|1| .12814 .55490 .23 .8174 -.95945 1.21573

|This is THETA(02) in class probability model.

Constant| 0.0 .....(Fixed Parameter).....

\_TIN1|2| 0.0 .....(Fixed Parameter).....

**Latent Class model bovines**

**AMED:**

|-> CALC;Ran(12345)$

|-> LCLOGIT

;lhs=choice

;choices=alt1,alt2,alt3

;LCM=amed

;pds=4

;pts=2

;Model:

U(alt1)=bcl\*cl+bss\*ss+bsos\*sos+bcost\*cost/

U(alt2)=bcl\*cl+bss\*ss+bsos\*sos+bcost\*cost/

U(alt3)=sq+bcl\*cl+bss\*ss+bsos\*sos+bcost\*cost$

Normal exit: 5 iterations. Status=0, F= 412.0972

-----------------------------------------------------------------------------

Discrete choice (multinomial logit) model

Dependent variable Choice

Log likelihood function -412.09718

Estimation based on N = 468, K = 5

Inf.Cr.AIC = 834.2 AIC/N = 1.782

Model estimated: Jan 22, 2016, 09:32:14

R2=1-LogL/LogL\* Log-L fncn R-sqrd R2Adj

Constants only -506.1469 .1858 .1752

Response data are given as ind. choices

Number of obs.= 468, skipped 0 obs

--------+--------------------------------------------------------------------

| Standard Prob. 95% Confidence

CHOICE| Coefficient Error z |z|>Z\* Interval

--------+--------------------------------------------------------------------

BCL|1| -.27848\*\*\* .06637 -4.20 .0000 -.40856 -.14839

BSS|1| .06783 .07783 .87 .3834 -.08470 .22037

BSOS|1| -.40329\*\*\* .07787 -5.18 .0000 -.55592 -.25066

BCOST|1| .00292\*\*\* .00026 11.12 .0000 .00240 .00343

SQ|1| 1.06306\*\*\* .17480 6.08 .0000 .72046 1.40567

--------+--------------------------------------------------------------------

Note: \*\*\*, \*\*, \* ==> Significance at 1%, 5%, 10% level.

-----------------------------------------------------------------------------

Normal exit: 37 iterations. Status=0, F= 371.9571

-----------------------------------------------------------------------------

Latent Class Logit Model

Dependent variable CHOICE

Log likelihood function -371.95709

Restricted log likelihood -514.15055

Chi squared [ 12 d.f.] 284.38692

Significance level .00000

McFadden Pseudo R-squared .2765600

Estimation based on N = 468, K = 12

Inf.Cr.AIC = 767.9 AIC/N = 1.641

Model estimated: Jan 22, 2016, 09:32:14

R2=1-LogL/LogL\* Log-L fncn R-sqrd R2Adj

No coefficients -514.1506 .2766 .2672

Constants only -506.1469 .2651 .2556

At start values -412.1048 .0974 .0857

Response data are given as ind. choices

Number of latent classes = 2

Average Class Probabilities

.579 .421

LCM model with panel has 117 groups

Fixed number of obsrvs./group= 4

Number of obs.= 468, skipped 0 obs

--------+--------------------------------------------------------------------

| Standard Prob. 95% Confidence

CHOICE| Coefficient Error z |z|>Z\* Interval

--------+--------------------------------------------------------------------

|Utility parameters in latent class -->> 1

BCL|1| -.29434\*\*\* .09133 -3.22 .0013 -.47334 -.11534

BSS|1| .50454\*\*\* .15438 3.27 .0011 .20197 .80711

BSOS|1| -.22513\* .11749 -1.92 .0554 -.45541 .00515

BCOST|1| .00360\*\*\* .00057 6.27 .0000 .00247 .00472

SQ|1| -.08935 .44449 -.20 .8407 -.96053 .78184

|Utility parameters in latent class -->> 2

BCL|2| -.57057\*\*\* .18422 -3.10 .0020 -.93163 -.20952

BSS|2| -.63947\*\* .25053 -2.55 .0107 -1.13051 -.14844

BSOS|2| -.94011\*\* .39414 -2.39 .0171 -1.71260 -.16761

BCOST|2| .00331\*\*\* .00079 4.19 .0000 .00176 .00486

SQ|2| 2.75834\*\*\* .66875 4.12 .0000 1.44760 4.06907

|This is THETA(01) in class probability model.

Constant| .80370\*\* .39576 2.03 .0423 .02803 1.57938

\_AMED|1| -1.23832\*\* .50018 -2.48 .0133 -2.21865 -.25800

|This is THETA(02) in class probability model.

Constant| 0.0 .....(Fixed Parameter).....

\_AMED|2| 0.0 .....(Fixed Parameter).....

--------+--------------------------------------------------------------------

**Benefit 3:**

CALC;Ran(12345)$

|-> LCLOGIT

;lhs=choice

;choices=alt1,alt2,alt3

;LCM=benefit3

;pds=4

;pts=2

;Model:

U(alt1)=bcl\*cl+bss\*ss+bsos\*sos+bcost\*cost/

U(alt2)=bcl\*cl+bss\*ss+bsos\*sos+bcost\*cost/

U(alt3)=sq+bcl\*cl+bss\*ss+bsos\*sos+bcost\*cost$

Normal exit: 5 iterations. Status=0, F= 412.0972

-----------------------------------------------------------------------------

Discrete choice (multinomial logit) model

Dependent variable Choice

Log likelihood function -412.09718

Estimation based on N = 468, K = 5

Inf.Cr.AIC = 834.2 AIC/N = 1.782

Model estimated: Jan 22, 2016, 09:44:59

R2=1-LogL/LogL\* Log-L fncn R-sqrd R2Adj

Constants only -506.1469 .1858 .1752

Response data are given as ind. choices

Number of obs.= 468, skipped 0 obs

--------+--------------------------------------------------------------------

| Standard Prob. 95% Confidence

CHOICE| Coefficient Error z |z|>Z\* Interval

--------+--------------------------------------------------------------------

BCL|1| -.27848\*\*\* .06637 -4.20 .0000 -.40856 -.14839

BSS|1| .06783 .07783 .87 .3834 -.08470 .22037

BSOS|1| -.40329\*\*\* .07787 -5.18 .0000 -.55592 -.25066

BCOST|1| .00292\*\*\* .00026 11.12 .0000 .00240 .00343

SQ|1| 1.06306\*\*\* .17480 6.08 .0000 .72046 1.40567

--------+--------------------------------------------------------------------

Note: \*\*\*, \*\*, \* ==> Significance at 1%, 5%, 10% level.

-----------------------------------------------------------------------------

Line search at iteration 50 does not improve fn. Exiting optimization.

-----------------------------------------------------------------------------

Latent Class Logit Model

Dependent variable CHOICE

Log likelihood function -368.43683

Restricted log likelihood -514.15055

Chi squared [ 12 d.f.] 291.42745

Significance level .00000

McFadden Pseudo R-squared .2834067

Estimation based on N = 468, K = 12

Inf.Cr.AIC = 760.9 AIC/N = 1.626

Model estimated: Jan 22, 2016, 09:44:59

R2=1-LogL/LogL\* Log-L fncn R-sqrd R2Adj

No coefficients -514.1506 .2834 .2741

Constants only -506.1469 .2721 .2626

At start values -412.1048 .1060 .0944

Response data are given as ind. choices

Number of latent classes = 2

Average Class Probabilities

.493 .507

LCM model with panel has 117 groups

Fixed number of obsrvs./group= 4

Number of obs.= 468, skipped 0 obs

--------+--------------------------------------------------------------------

| Standard Prob. 95% Confidence

CHOICE| Coefficient Error z |z|>Z\* Interval

--------+--------------------------------------------------------------------

|Utility parameters in latent class -->> 1

BCL|1| -.29885\*\*\* .11369 -2.63 .0086 -.52168 -.07602

BSS|1| .69463\*\*\* .17423 3.99 .0001 .35314 1.03612

BSOS|1| -.24431\* .13205 -1.85 .0643 -.50313 .01452

BCOST|1| .00457\*\*\* .00070 6.50 .0000 .00319 .00595

SQ|1| -.06623 .40854 -.16 .8712 -.86695 .73449

|Utility parameters in latent class -->> 2

BCL|2| -.55539\*\*\* .14738 -3.77 .0002 -.84424 -.26654

BSS|2| -.53859\*\*\* .15615 -3.45 .0006 -.84465 -.23254

BSOS|2| -.67489\*\*\* .18150 -3.72 .0002 -1.03062 -.31915

BCOST|2| .00247\*\*\* .00051 4.87 .0000 .00148 .00347

SQ|2| 1.97466\*\*\* .36351 5.43 .0000 1.26220 2.68712

|This is THETA(01) in class probability model.

Constant| -.32780 .30706 -1.07 .2857 -.92962 .27403

\_BENEF|1| 35.5481 .1842D+08 .00 1.0000 \*\*\*\*\*\*\*\*\*\*\* \*\*\*\*\*\*\*\*\*\*\*

|This is THETA(02) in class probability model.

Constant| 0.0 .....(Fixed Parameter).....

\_BENEF|2| 0.0 .....(Fixed Parameter).....

--------+--------------------------------------------------------------------

Benefit 1: Error: 1027: Models - estimated variance matrix of estimates is singular

**Age 1:**

CALC;Ran(12345)$

|-> LCLOGIT

;lhs=choice

;choices=alt1,alt2,alt3

;LCM=age1

;pds=4

;pts=2

;Model:

U(alt1)=bcl\*cl+bss\*ss+bsos\*sos+bcost\*cost/

U(alt2)=bcl\*cl+bss\*ss+bsos\*sos+bcost\*cost/

U(alt3)=sq+bcl\*cl+bss\*ss+bsos\*sos+bcost\*cost$

Normal exit: 5 iterations. Status=0, F= 412.0972

-----------------------------------------------------------------------------

Discrete choice (multinomial logit) model

Dependent variable Choice

Log likelihood function -412.09718

Estimation based on N = 468, K = 5

Inf.Cr.AIC = 834.2 AIC/N = 1.782

Model estimated: Jan 22, 2016, 09:47:41

R2=1-LogL/LogL\* Log-L fncn R-sqrd R2Adj

Constants only -506.1469 .1858 .1752

Response data are given as ind. choices

Number of obs.= 468, skipped 0 obs

--------+--------------------------------------------------------------------

| Standard Prob. 95% Confidence

CHOICE| Coefficient Error z |z|>Z\* Interval

--------+--------------------------------------------------------------------

BCL|1| -.27848\*\*\* .06637 -4.20 .0000 -.40856 -.14839

BSS|1| .06783 .07783 .87 .3834 -.08470 .22037

BSOS|1| -.40329\*\*\* .07787 -5.18 .0000 -.55592 -.25066

BCOST|1| .00292\*\*\* .00026 11.12 .0000 .00240 .00343

SQ|1| 1.06306\*\*\* .17480 6.08 .0000 .72046 1.40567

--------+--------------------------------------------------------------------

Note: \*\*\*, \*\*, \* ==> Significance at 1%, 5%, 10% level.

-----------------------------------------------------------------------------

Normal exit: 22 iterations. Status=0, F= 371.6154

-----------------------------------------------------------------------------

Latent Class Logit Model

Dependent variable CHOICE

Log likelihood function -371.61543

Restricted log likelihood -514.15055

Chi squared [ 12 d.f.] 285.07023

Significance level .00000

McFadden Pseudo R-squared .2772245

Estimation based on N = 468, K = 12

Inf.Cr.AIC = 767.2 AIC/N = 1.639

Model estimated: Jan 22, 2016, 09:47:42

R2=1-LogL/LogL\* Log-L fncn R-sqrd R2Adj

No coefficients -514.1506 .2772 .2678

Constants only -506.1469 .2658 .2563

At start values -412.1048 .0983 .0865

Response data are given as ind. choices

Number of latent classes = 2

Average Class Probabilities

.459 .541

LCM model with panel has 117 groups

Fixed number of obsrvs./group= 4

Number of obs.= 468, skipped 0 obs

--------+--------------------------------------------------------------------

| Standard Prob. 95% Confidence

CHOICE| Coefficient Error z |z|>Z\* Interval

--------+--------------------------------------------------------------------

|Utility parameters in latent class -->> 1

BCL|1| -.35271\*\*\* .12808 -2.75 .0059 -.60374 -.10168

BSS|1| .79121\*\*\* .22953 3.45 .0006 .34133 1.24109

BSOS|1| -.29459\*\* .14376 -2.05 .0404 -.57636 -.01282

BCOST|1| .00472\*\*\* .00086 5.47 .0000 .00303 .00641

SQ|1| -.40411 .50534 -.80 .4239 -1.39457 .58634

|Utility parameters in latent class -->> 2

BCL|2| -.49097\*\*\* .14344 -3.42 .0006 -.77209 -.20984

BSS|2| -.51943\*\*\* .15209 -3.42 .0006 -.81753 -.22133

BSOS|2| -.57213\*\*\* .18668 -3.06 .0022 -.93800 -.20625

BCOST|2| .00261\*\*\* .00047 5.56 .0000 .00169 .00353

SQ|2| 1.97330\*\*\* .35748 5.52 .0000 1.27266 2.67394

|This is THETA(01) in class probability model.

Constant| .05565 .33760 .16 .8691 -.60603 .71733

\_AGE1|1| -2.08832\* 1.10693 -1.89 .0592 -4.25787 .08123

|This is THETA(02) in class probability model.

Constant| 0.0 .....(Fixed Parameter).....

\_AGE1|2| 0.0 .....(Fixed Parameter).....

--------+--------------------------------------------------------------------

**Education level of respondents (edu1):**

CALC;Ran(12345)$

|-> LCLOGIT

;lhs=choice

;choices=alt1,alt2,alt3

;LCM=edu1

;pds=4

;pts=2

;Model:

U(alt1)=bcl\*cl+bss\*ss+bsos\*sos+bcost\*cost/

U(alt2)=bcl\*cl+bss\*ss+bsos\*sos+bcost\*cost/

U(alt3)=sq+bcl\*cl+bss\*ss+bsos\*sos+bcost\*cost$

Normal exit: 5 iterations. Status=0, F= 412.0972

-----------------------------------------------------------------------------

Discrete choice (multinomial logit) model

Dependent variable Choice

Log likelihood function -412.09718

Estimation based on N = 468, K = 5

Inf.Cr.AIC = 834.2 AIC/N = 1.782

Model estimated: Jan 22, 2016, 09:53:27

R2=1-LogL/LogL\* Log-L fncn R-sqrd R2Adj

Constants only -506.1469 .1858 .1752

Response data are given as ind. choices

Number of obs.= 468, skipped 0 obs

--------+--------------------------------------------------------------------

| Standard Prob. 95% Confidence

CHOICE| Coefficient Error z |z|>Z\* Interval

--------+--------------------------------------------------------------------

BCL|1| -.27848\*\*\* .06637 -4.20 .0000 -.40856 -.14839

BSS|1| .06783 .07783 .87 .3834 -.08470 .22037

BSOS|1| -.40329\*\*\* .07787 -5.18 .0000 -.55592 -.25066

BCOST|1| .00292\*\*\* .00026 11.12 .0000 .00240 .00343

SQ|1| 1.06306\*\*\* .17480 6.08 .0000 .72046 1.40567

--------+--------------------------------------------------------------------

Note: \*\*\*, \*\*, \* ==> Significance at 1%, 5%, 10% level.

-----------------------------------------------------------------------------

Normal exit: 22 iterations. Status=0, F= 374.9048

-----------------------------------------------------------------------------

Latent Class Logit Model

Dependent variable CHOICE

Log likelihood function -374.90479

Restricted log likelihood -514.15055

Chi squared [ 12 d.f.] 278.49152

Significance level .00000

McFadden Pseudo R-squared .2708268

Estimation based on N = 468, K = 12

Inf.Cr.AIC = 773.8 AIC/N = 1.653

Model estimated: Jan 22, 2016, 09:53:27

R2=1-LogL/LogL\* Log-L fncn R-sqrd R2Adj

No coefficients -514.1506 .2708 .2614

Constants only -506.1469 .2593 .2497

At start values -412.1048 .0903 .0785

Response data are given as ind. choices

Number of latent classes = 2

Average Class Probabilities

.449 .551

LCM model with panel has 117 groups

Fixed number of obsrvs./group= 4

Number of obs.= 468, skipped 0 obs

--------+--------------------------------------------------------------------

| Standard Prob. 95% Confidence

CHOICE| Coefficient Error z |z|>Z\* Interval

--------+--------------------------------------------------------------------

|Utility parameters in latent class -->> 1

BCL|1| -.35817\*\*\* .12944 -2.77 .0057 -.61187 -.10448

BSS|1| .83564\*\*\* .24069 3.47 .0005 .36390 1.30738

BSOS|1| -.29407\* .15076 -1.95 .0511 -.58956 .00142

BCOST|1| .00489\*\*\* .00092 5.29 .0000 .00308 .00670

SQ|1| -.41472 .51783 -.80 .4232 -1.42966 .60021

|Utility parameters in latent class -->> 2

BCL|2| -.50273\*\*\* .13780 -3.65 .0003 -.77282 -.23264

BSS|2| -.51190\*\*\* .14960 -3.42 .0006 -.80512 -.21868

BSOS|2| -.55777\*\*\* .18207 -3.06 .0022 -.91461 -.20092

BCOST|2| .00257\*\*\* .00047 5.46 .0000 .00165 .00350

SQ|2| 1.92556\*\*\* .34838 5.53 .0000 1.24276 2.60837

|This is THETA(01) in class probability model.

Constant| -.38362 .38022 -1.01 .3130 -1.12884 .36159

\_EDU1|1| .33139 .45908 .72 .4704 -.56840 1.23118

|This is THETA(02) in class probability model.

Constant| 0.0 .....(Fixed Parameter).....

\_EDU1|2| 0.0 .....(Fixed Parameter).....

**Income:**

CALC;Ran(12345)$

|-> LCLOGIT

;lhs=choice

;choices=alt1,alt2,alt3

;LCM=tin1

;pds=4

;pts=2

;Model:

U(alt1)=bcl\*cl+bss\*ss+bsos\*sos+bcost\*cost/

U(alt2)=bcl\*cl+bss\*ss+bsos\*sos+bcost\*cost/

U(alt3)=sq+bcl\*cl+bss\*ss+bsos\*sos+bcost\*cost$

Normal exit: 5 iterations. Status=0, F= 412.0972

-----------------------------------------------------------------------------

Discrete choice (multinomial logit) model

Dependent variable Choice

Log likelihood function -412.09718

Estimation based on N = 468, K = 5

Inf.Cr.AIC = 834.2 AIC/N = 1.782

Model estimated: Jan 22, 2016, 09:54:46

R2=1-LogL/LogL\* Log-L fncn R-sqrd R2Adj

Constants only -506.1469 .1858 .1752

Response data are given as ind. choices

Number of obs.= 468, skipped 0 obs

--------+--------------------------------------------------------------------

| Standard Prob. 95% Confidence

CHOICE| Coefficient Error z |z|>Z\* Interval

--------+--------------------------------------------------------------------

BCL|1| -.27848\*\*\* .06637 -4.20 .0000 -.40856 -.14839

BSS|1| .06783 .07783 .87 .3834 -.08470 .22037

BSOS|1| -.40329\*\*\* .07787 -5.18 .0000 -.55592 -.25066

BCOST|1| .00292\*\*\* .00026 11.12 .0000 .00240 .00343

SQ|1| 1.06306\*\*\* .17480 6.08 .0000 .72046 1.40567

--------+--------------------------------------------------------------------

Note: \*\*\*, \*\*, \* ==> Significance at 1%, 5%, 10% level.

-----------------------------------------------------------------------------

Normal exit: 22 iterations. Status=0, F= 373.5943

-----------------------------------------------------------------------------

Latent Class Logit Model

Dependent variable CHOICE

Log likelihood function -373.59428

Restricted log likelihood -514.15055

Chi squared [ 12 d.f.] 281.11254

Significance level .00000

McFadden Pseudo R-squared .2733757

Estimation based on N = 468, K = 12

Inf.Cr.AIC = 771.2 AIC/N = 1.648

Model estimated: Jan 22, 2016, 09:54:46

R2=1-LogL/LogL\* Log-L fncn R-sqrd R2Adj

No coefficients -514.1506 .2734 .2639

Constants only -506.1469 .2619 .2523

At start values -412.1048 .0934 .0817

Response data are given as ind. choices

Number of latent classes = 2

Average Class Probabilities

.460 .540

LCM model with panel has 117 groups

Fixed number of obsrvs./group= 4

Number of obs.= 468, skipped 0 obs

--------+--------------------------------------------------------------------

| Standard Prob. 95% Confidence

CHOICE| Coefficient Error z |z|>Z\* Interval

--------+--------------------------------------------------------------------

|Utility parameters in latent class -->> 1

BCL|1| -.36616\*\*\* .12805 -2.86 .0042 -.61713 -.11519

BSS|1| .80851\*\*\* .24782 3.26 .0011 .32279 1.29424

BSOS|1| -.28199\* .14587 -1.93 .0532 -.56789 .00391

BCOST|1| .00478\*\*\* .00096 4.98 .0000 .00290 .00667

SQ|1| -.35758 .51630 -.69 .4886 -1.36951 .65436

|Utility parameters in latent class -->> 2

BCL|2| -.49157\*\*\* .14133 -3.48 .0005 -.76857 -.21456

BSS|2| -.51783\*\*\* .15386 -3.37 .0008 -.81939 -.21627

BSOS|2| -.58138\*\*\* .19214 -3.03 .0025 -.95797 -.20480

BCOST|2| .00256\*\*\* .00049 5.28 .0000 .00161 .00352

SQ|2| 1.94350\*\*\* .37552 5.18 .0000 1.20749 2.67951

|This is THETA(01) in class probability model.

Constant| -.48657 .39860 -1.22 .2222 -1.26781 .29468

\_TIN1|1| .79654\* .47475 1.68 .0934 -.13395 1.72703

|This is THETA(02) in class probability model.

Constant| 0.0 .....(Fixed Parameter).....

\_TIN1|2| 0.0 .....(Fixed Parameter).....

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