```
1 . use "/Users/michaelodonnell/Dropbox/Research/Stanford Ads/Stanford_Advertising_to_analyze_drop_incomplet
  > es&att_check.dta"

2 . do "/var/folders/jg/24l23cq53cq2m6d8dbn69rx80000gn/T//SD83608.000000"

3 . **first 750**
4 . preserve

5 . keep if second750==0
  (726 observations deleted)

6 .
7 . sem (Recommend -> rec_mcd@1 rec_mcd_fries rec_mcd_food) (IV -> mcdonalds_first@1) (Female -> female@1) (
  > Age18 -> age_18@1) (Age25 -> age_25@1) (Age35 -> age_35@1) (Age45 -> age_45@1) (Age55 -> age_55@1) (Age6
  > 5 -> age_65_plus@1) (Hispanic -> hispanic@1) (Black -> black@1) (Other_race -> race_other@1) (Hs_grad ->
  >  hs_grad@1) (Some_college -> some_college@1) (College_grad -> college_grad@1) (Income30 -> inc_30_to_50@
  > 1) (Income50 -> inc_50_to_75@1) (Income100 -> inc_100_plus@1) (Income75 -> inc_75_to_100@1) (Midwest ->
  > midwest@1) (South -> south@1) (West -> west@1) (Recommend -> IV Female Age18 Age25 Age35 Age45 Age55 Age
  > 65 Hispanic Black Other_race Hs_grad Some_college College_grad Income30 Income50 Income75 Income100 Midw
  > est South West), cov(e.mcdonalds_first@0 e.female@0 e.age_18@0 e.age_25@0 e.age_35@0 e.age_45@0 e.age_55
  > @0 e.age_65_plus@0 e.hispanic@0 e.black@0 e.race_other@0 e.hs_grad@0 e.some_college@0 e.college_grad@0 e
  > .inc_30_to_50@0 e.inc_50_to_75@0 e.inc_75_to_100@0 e.inc_100_plus@0 e.midwest@0 e.south@0 e.west@0)

  Endogenous variables

  Measurement:  rec_mcd rec_mcd_fries rec_mcd_food mcdonalds_first female age_18_to_24 age_25_to_34
                age_35_to_44 age_45_to_54 age_55_to_64 age_65_plus hispanic black race_other hs_grad
                some_college college_grad inc_30_to_50 inc_50_to_75 inc_100_plus inc_75_to_100 midwest
                south west
  Latent:       IV Female Age18 Age25 Age35 Age45 Age55 Age65 Hispanic Black Other_race Hs_grad
                Some_college College_grad Income30 Income50 Income100 Income75 Midwest South West

  Exogenous variables

  Latent:       Recommend

  Fitting target model:

  Iteration 0:   log likelihood = -10896.091
  Iteration 1:   log likelihood = -10895.468
  Iteration 2:   log likelihood = -10895.466
  Iteration 3:   log likelihood = -10895.466

  Structural equation model                       Number of obs     =        811
  Estimation method  = ml
  Log likelihood     = -10895.466

   ( 1)  [mcdonalds_first]IV = 1
   ( 2)  [female]Female = 1
   ( 3)  [age_18_to_24]Age18 = 1
   ( 4)  [age_25_to_34]Age25 = 1
   ( 5)  [age_35_to_44]Age35 = 1
   ( 6)  [age_45_to_54]Age45 = 1
   ( 7)  [age_55_to_64]Age55 = 1
   ( 8)  [age_65_plus]Age65 = 1
   ( 9)  [hispanic]Hispanic = 1
   (10)  [black]Black = 1
   (11)  [race_other]Other_race = 1
   (12)  [hs_grad]Hs_grad = 1
   (13)  [some_college]Some_college = 1
   (14)  [college_grad]College_grad = 1
   (15)  [inc_30_to_50]Income30 = 1
   (16)  [inc_50_to_75]Income50 = 1
```

```
(17)  [inc_100_plus]Income100 = 1
(18)  [inc_75_to_100]Income75 = 1
(19)  [midwest]Midwest = 1
(20)  [south]South = 1
(21)  [west]West = 1
(22)  [rec_mcd]Recommend = 1
(23)  [/]var(e.mcdonalds_first) = 0
(24)  [/]var(e.female) = 0
(25)  [/]var(e.age_18_to_24) = 0
(26)  [/]var(e.age_25_to_34) = 0
(27)  [/]var(e.age_35_to_44) = 0
(28)  [/]var(e.age_45_to_54) = 0
(29)  [/]var(e.age_55_to_64) = 0
(30)  [/]var(e.age_65_plus) = 0
(31)  [/]var(e.hispanic) = 0
(32)  [/]var(e.black) = 0
(33)  [/]var(e.race_other) = 0
(34)  [/]var(e.hs_grad) = 0
(35)  [/]var(e.some_college) = 0
(36)  [/]var(e.college_grad) = 0
(37)  [/]var(e.inc_30_to_50) = 0
(38)  [/]var(e.inc_50_to_75) = 0
(39)  [/]var(e.inc_100_plus) = 0
(40)  [/]var(e.inc_75_to_100) = 0
(41)  [/]var(e.midwest) = 0
(42)  [/]var(e.south) = 0
(43)  [/]var(e.west) = 0
```

| | | OIM Coef. | Std. Err. | z | P>\|z\| | [95% Conf. | Interval] |
|---|---|---|---|---|---|---|---|
| **Structural** | | | | | | | |
| IV | | | | | | | |
| | Recommend | **-.047677** | **.0134226** | **-3.55** | **0.000** | **-.0739849** | **-.0213691** |
| Female | | | | | | | |
| | Recommend | **.0185243** | **.0135044** | **1.37** | **0.170** | **-.0079438** | **.0449925** |
| Age18 | | | | | | | |
| | Recommend | **.0027876** | **.0061244** | **0.46** | **0.649** | **-.009216** | **.0147912** |
| Age25 | | | | | | | |
| | Recommend | **.0014746** | **.0087342** | **0.17** | **0.866** | **-.0156441** | **.0185933** |
| Age35 | | | | | | | |
| | Recommend | **-.014331** | **.0092103** | **-1.56** | **0.120** | **-.0323827** | **.0037208** |
| Age45 | | | | | | | |
| | Recommend | **-.0123938** | **.0104406** | **-1.19** | **0.235** | **-.032857** | **.0080693** |
| Age55 | | | | | | | |
| | Recommend | **.00698** | **.0113936** | **0.61** | **0.540** | **-.0153511** | **.0293111** |
| Age65 | | | | | | | |
| | Recommend | **.0165825** | **.0118002** | **1.41** | **0.160** | **-.0065455** | **.0397106** |
| Hispanic | | | | | | | |
| | Recommend | **-.0309934** | **.0081764** | **-3.79** | **0.000** | **-.0470188** | **-.0149679** |
| Black | | | | | | | |
| | Recommend | **-.0336782** | **.0086617** | **-3.89** | **0.000** | **-.0506548** | **-.0167015** |
| Other_race | | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| Recommend | .0037069 | .0081506 | 0.45 | 0.649 | -.0122679 | .0196818 |
| Hs_grad | | | | | | |
| Recommend | -.0337085 | .0103873 | -3.25 | 0.001 | -.0540672 | -.0133498 |
| Some_college | | | | | | |
| Recommend | -.030826 | .0112892 | -2.73 | 0.006 | -.0529524 | -.0086996 |
| College_grad | | | | | | |
| Recommend | .0686997 | .0131998 | 5.20 | 0.000 | .0428285 | .0945709 |
| Income30 | | | | | | |
| Recommend | -.0215519 | .0108281 | -1.99 | 0.047 | -.0427747 | -.0003292 |
| Income50 | | | | | | |
| Recommend | .0164759 | .0113977 | 1.45 | 0.148 | -.0058631 | .038815 |
| Income100 | | | | | | |
| Recommend | .015839 | .0101488 | 1.56 | 0.119 | -.0040522 | .0357302 |
| Income75 | | | | | | |
| Recommend | .0254087 | .0086588 | 2.93 | 0.003 | .0084377 | .0423797 |
| Midwest | | | | | | |
| Recommend | .0026565 | .0110301 | 0.24 | 0.810 | -.0189621 | .0242751 |
| South | | | | | | |
| Recommend | -.0028918 | .0129413 | -0.22 | 0.823 | -.0282564 | .0224727 |
| West | | | | | | |
| Recommend | .0111902 | .0108358 | 1.03 | 0.302 | -.0100476 | .0324279 |
| **Measurement** | | | | | | |
| rec_mcd | | | | | | |
| Recommend | 1 | (constrained) | | | | |
| _cons | 3.398274 | .050092 | 67.84 | 0.000 | 3.300095 | 3.496452 |
| rec_mcd_fries | | | | | | |
| Recommend | .9784715 | .0242805 | 40.30 | 0.000 | .9308825 | 1.026061 |
| _cons | 3.197287 | .0522036 | 61.25 | 0.000 | 3.09497 | 3.299605 |
| rec_mcd_food | | | | | | |
| Recommend | 1.031199 | .0200071 | 51.54 | 0.000 | .9919863 | 1.070413 |
| _cons | 3.376079 | .0500303 | 67.48 | 0.000 | 3.278021 | 3.474136 |
| mcdonalds_first | | | | | | |
| IV | 1 | (constrained) | | | | |
| _cons | .4907522 | .0175544 | 27.96 | 0.000 | .4563462 | .5251581 |
| female | | | | | | |
| Female | 1 | (constrained) | | | | |
| _cons | .4956843 | .0175567 | 28.23 | 0.000 | .4612738 | .5300949 |
| age_18_to_24 | | | | | | |
| Age18 | 1 | (constrained) | | | | |
| _cons | .054254 | .0079541 | 6.82 | 0.000 | .0386642 | .0698438 |
| age_25_to_34 | | | | | | |
| Age25 | 1 | (constrained) | | | | |
| _cons | .1183724 | .0113438 | 10.44 | 0.000 | .096139 | .1406058 |
| age_35_to_44 | | | | | | |
| Age35 | 1 | (constrained) | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | _cons | .134402 | .0119771 | 11.22 | 0.000 | .1109274 | .1578766 |
| age_45_to_54 | | | | | | | |
| | Age45 | 1 | (constrained) | | | | |
| | _cons | .1824908 | .013563 | 13.46 | 0.000 | .1559077 | .2090738 |
| age_55_to_64 | | | | | | | |
| | Age55 | 1 | (constrained) | | | | |
| | _cons | .2305795 | .0147905 | 15.59 | 0.000 | .2015908 | .2595683 |
| age_65_plus | | | | | | | |
| | Age65 | 1 | (constrained) | | | | |
| | _cons | .2564735 | .0153341 | 16.73 | 0.000 | .2264192 | .2865278 |
| hispanic | | | | | | | |
| | Hispanic | 1 | (constrained) | | | | |
| | _cons | .1035758 | .0106998 | 9.68 | 0.000 | .0826046 | .1245471 |
| black | | | | | | | |
| | Black | 1 | (constrained) | | | | |
| | _cons | .1183724 | .0113438 | 10.44 | 0.000 | .096139 | .1406058 |
| race_other | | | | | | | |
| | Other_race | 1 | (constrained) | | | | |
| | _cons | .1011097 | .0105862 | 9.55 | 0.000 | .0803612 | .1218583 |
| hs_grad | | | | | | | |
| | Hs_grad | 1 | (constrained) | | | | |
| | _cons | .1824908 | .013563 | 13.46 | 0.000 | .1559077 | .2090738 |
| some_college | | | | | | | |
| | Some_college | 1 | (constrained) | | | | |
| | _cons | .2268804 | .0147066 | 15.43 | 0.000 | .198056 | .2557047 |
| college_grad | | | | | | | |
| | College_grad | 1 | (constrained) | | | | |
| | _cons | .5721332 | .0173737 | 32.93 | 0.000 | .5380813 | .606185 |
| inc_30_to_50 | | | | | | | |
| | Income30 | 1 | (constrained) | | | | |
| | _cons | .2009864 | .0140718 | 14.28 | 0.000 | .1734062 | .2285667 |
| inc_50_to_75 | | | | | | | |
| | Income50 | 1 | (constrained) | | | | |
| | _cons | .2318126 | .0148181 | 15.64 | 0.000 | .2027697 | .2608555 |
| inc_100_plus | | | | | | | |
| | Income100 | 1 | (constrained) | | | | |
| | _cons | .1701603 | .0131952 | 12.90 | 0.000 | .1442982 | .1960224 |
| inc_75_to_100 | | | | | | | |
| | Income75 | 1 | (constrained) | | | | |
| | _cons | .1171393 | .0112924 | 10.37 | 0.000 | .0950066 | .1392721 |
| midwest | | | | | | | |
| | Midwest | 1 | (constrained) | | | | |
| | _cons | .2108508 | .0143238 | 14.72 | 0.000 | .1827768 | .2389248 |
| south | | | | | | | |
| | South | 1 | (constrained) | | | | |
| | _cons | .3551171 | .0168041 | 21.13 | 0.000 | .3221817 | .3880526 |
| west | | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| West | 1 | (constrained) | | | | |
| _cons | .2009864 | .0140718 | 14.28 | 0.000 | .1734062 | .2285667 |
| var(e.rec_mcd) | .271041 | .0222728 | | | .2307213 | .3184069 |
| var(e.rec_mcd_fries) | .5213595 | .0311247 | | | .4637899 | .586075 |
| var(e.rec_mcd_food) | .1542489 | .020362 | | | .119085 | .1997961 |
| var(e.mcdonalds_first) | 0 | (constrained) | | | | |
| var(e.female) | 0 | (constrained) | | | | |
| var(e.age_18_to_24) | 0 | (constrained) | | | | |
| var(e.age_25_to_34) | 0 | (constrained) | | | | |
| var(e.age_35_to_44) | 0 | (constrained) | | | | |
| var(e.age_45_to_54) | 0 | (constrained) | | | | |
| var(e.age_55_to_64) | 0 | (constrained) | | | | |
| var(e.age_65_plus) | 0 | (constrained) | | | | |
| var(e.hispanic) | 0 | (constrained) | | | | |
| var(e.black) | 0 | (constrained) | | | | |
| var(e.race_other) | 0 | (constrained) | | | | |
| var(e.hs_grad) | 0 | (constrained) | | | | |
| var(e.some_college) | 0 | (constrained) | | | | |
| var(e.college_grad) | 0 | (constrained) | | | | |
| var(e.inc_30_to_50) | 0 | (constrained) | | | | |
| var(e.inc_50_to_75) | 0 | (constrained) | | | | |
| var(e.inc_100_plus) | 0 | (constrained) | | | | |
| var(e.inc_75_to_100) | 0 | (constrained) | | | | |
| var(e.midwest) | 0 | (constrained) | | | | |
| var(e.south) | 0 | (constrained) | | | | |
| var(e.west) | 0 | (constrained) | | | | |
| var(e.IV) | .2459049 | .0122207 | | | .2230823 | .2710623 |
| var(e.Female) | .2493761 | .0123853 | | | .2262453 | .2748717 |
| var(e.Age18) | .0512968 | .0025474 | | | .0465392 | .0565407 |
| var(e.Age25) | .1043565 | .0051823 | | | .094678 | .1150244 |
| var(e.Age35) | .1159758 | .0057602 | | | .1052182 | .1278333 |
| var(e.Age45) | .1489169 | .0073958 | | | .1351046 | .1641414 |
| var(e.Age55) | .1773267 | .0088062 | | | .1608802 | .1954544 |
| var(e.Age65) | .1902098 | .0094469 | | | .1725668 | .2096565 |
| var(e.Hispanic) | .0911535 | .0045305 | | | .0826926 | .10048 |
| var(e.Black) | .1023597 | .0050877 | | | .0928582 | .1128334 |
| var(e.Other_race) | .0908623 | .0045123 | | | .0824352 | .1001509 |
| var(e.Hs_grad) | .1471836 | .0073138 | | | .1335248 | .1622396 |
| var(e.Some_college) | .1737295 | .0086313 | | | .1576101 | .1914976 |
| var(e.College_grad) | .2364717 | .0117627 | | | .2145054 | .2606874 |
| var(e.Income30) | .1597716 | .0079362 | | | .1449501 | .1761085 |
| var(e.Income50) | .1775967 | .0088205 | | | .1611236 | .1957539 |
| var(e.Income100) | .1407632 | .0069913 | | | .1277064 | .155155 |
| var(e.Income75) | .1022789 | .0050817 | | | .0927885 | .1127401 |
| var(e.Midwest) | .1663803 | .0082624 | | | .1509494 | .1833887 |
| var(e.South) | .2289942 | .0113718 | | | .2077562 | .2524033 |
| var(e.West) | .16037 | .0079644 | | | .1454956 | .176765 |
| var(Recommend) | 1.763925 | .1017155 | | | 1.57542 | 1.974986 |

LR test of model vs. saturated: chi2(**252**) = **5650.85**, Prob > chi2 = **0.0000**

```
 8 .
 9 . restore

10 .
11 . **second 750**
12 . preserve

13 . keep if second750==1
   (811 observations deleted)

14 .
```

```
15 . sem (Recommend -> rec_mcd@1 rec_mcd_fries rec_mcd_food) (IV -> mcdonalds_first@1) (Female -> female@1) (
   > Age18 -> age_18@1) (Age25 -> age_25@1) (Age35 -> age_35@1) (Age45 -> age_45@1) (Age55 -> age_55@1) (Age6
   > 5 -> age_65_plus@1) (Hispanic -> hispanic@1) (Black -> black@1) (Other_race -> race_other@1) (Hs_grad ->
   >  hs_grad@1) (Some_college -> some_college@1) (College_grad -> college_grad@1) (Income30 -> inc_30_to_50@
   > 1) (Income50 -> inc_50_to_75@1) (Income100 -> inc_100_plus@1) (Income75 -> inc_75_to_100@1) (Midwest ->
   > midwest@1) (South -> south@1) (West -> west@1) (Recommend -> IV Female Age18 Age25 Age35 Age45 Age55 Age
   > 65 Hispanic Black Other_race Hs_grad Some_college College_grad Income30 Income50 Income75 Income100 Midw
   > est South West), cov(e.mcdonalds_first@0 e.female@0 e.age_18@0 e.age_25@0 e.age_35@0 e.age_45@0 e.age_55
   > @0 e.age_65_plus@0 e.hispanic@0 e.black@0 e.race_other@0 e.hs_grad@0 e.some_college@0 e.college_grad@0 e
   > .inc_30_to_50@0 e.inc_50_to_75@0 e.inc_75_to_100@0 e.inc_100_plus@0 e.midwest@0 e.south@0 e.west@0)

Endogenous variables

Measurement:  rec_mcd rec_mcd_fries rec_mcd_food mcdonalds_first female age_18_to_24 age_25_to_34
              age_35_to_44 age_45_to_54 age_55_to_64 age_65_plus hispanic black race_other hs_grad
              some_college college_grad inc_30_to_50 inc_50_to_75 inc_100_plus inc_75_to_100 midwest
              south west
Latent:       IV Female Age18 Age25 Age35 Age45 Age55 Age65 Hispanic Black Other_race Hs_grad
              Some_college College_grad Income30 Income50 Income100 Income75 Midwest South West

Exogenous variables

Latent:       Recommend

Fitting target model:

Iteration 0:   log likelihood =  -10025.32
Iteration 1:   log likelihood = -10025.117
Iteration 2:   log likelihood = -10025.117

Structural equation model                       Number of obs     =        726
Estimation method  = ml
Log likelihood     = -10025.117

 ( 1)  [mcdonalds_first]IV = 1
 ( 2)  [female]Female = 1
 ( 3)  [age_18_to_24]Age18 = 1
 ( 4)  [age_25_to_34]Age25 = 1
 ( 5)  [age_35_to_44]Age35 = 1
 ( 6)  [age_45_to_54]Age45 = 1
 ( 7)  [age_55_to_64]Age55 = 1
 ( 8)  [age_65_plus]Age65 = 1
 ( 9)  [hispanic]Hispanic = 1
 (10)  [black]Black = 1
 (11)  [race_other]Other_race = 1
 (12)  [hs_grad]Hs_grad = 1
 (13)  [some_college]Some_college = 1
 (14)  [college_grad]College_grad = 1
 (15)  [inc_30_to_50]Income30 = 1
 (16)  [inc_50_to_75]Income50 = 1
 (17)  [inc_100_plus]Income100 = 1
 (18)  [inc_75_to_100]Income75 = 1
 (19)  [midwest]Midwest = 1
 (20)  [south]South = 1
 (21)  [west]West = 1
 (22)  [rec_mcd]Recommend = 1
 (23)  [/]var(e.mcdonalds_first) = 0
 (24)  [/]var(e.female) = 0
 (25)  [/]var(e.age_18_to_24) = 0
 (26)  [/]var(e.age_25_to_34) = 0
 (27)  [/]var(e.age_35_to_44) = 0
 (28)  [/]var(e.age_45_to_54) = 0
 (29)  [/]var(e.age_55_to_64) = 0
```

```
(30)  [/]var(e.age_65_plus) = 0
(31)  [/]var(e.hispanic) = 0
(32)  [/]var(e.black) = 0
(33)  [/]var(e.race_other) = 0
(34)  [/]var(e.hs_grad) = 0
(35)  [/]var(e.some_college) = 0
(36)  [/]var(e.college_grad) = 0
(37)  [/]var(e.inc_30_to_50) = 0
(38)  [/]var(e.inc_50_to_75) = 0
(39)  [/]var(e.inc_100_plus) = 0
(40)  [/]var(e.inc_75_to_100) = 0
(41)  [/]var(e.midwest) = 0
(42)  [/]var(e.south) = 0
(43)  [/]var(e.west) = 0
```

| | | OIM Coef. | Std. Err. | z | P>\|z\| | [95% Conf. | Interval] |
|---|---|---|---|---|---|---|---|
| **Structural** | | | | | | | |
| IV | | | | | | | |
| | Recommend | **-.0430469** | **.0143515** | **-3.00** | **0.003** | **-.0711753** | **-.0149185** |
| Female | | | | | | | |
| | Recommend | **-.001172** | **.014448** | **-0.08** | **0.935** | **-.0294895** | **.0271454** |
| Age18 | | | | | | | |
| | Recommend | **-.0109701** | **.0067326** | **-1.63** | **0.103** | **-.0241658** | **.0022257** |
| Age25 | | | | | | | |
| | Recommend | **.0050296** | **.0103935** | **0.48** | **0.628** | **-.0153413** | **.0254005** |
| Age35 | | | | | | | |
| | Recommend | **-.0233739** | **.0108401** | **-2.16** | **0.031** | **-.0446201** | **-.0021278** |
| Age45 | | | | | | | |
| | Recommend | **-.0073181** | **.0118349** | **-0.62** | **0.536** | **-.0305142** | **.0158779** |
| Age55 | | | | | | | |
| | Recommend | **.011252** | **.0114211** | **0.99** | **0.325** | **-.011133** | **.0336369** |
| Age65 | | | | | | | |
| | Recommend | **.0145853** | **.0110633** | **1.32** | **0.187** | **-.0070983** | **.0362689** |
| Hispanic | | | | | | | |
| | Recommend | **-.0229176** | **.0091535** | **-2.50** | **0.012** | **-.040858** | **-.0049771** |
| Black | | | | | | | |
| | Recommend | **-.0308953** | **.0092275** | **-3.35** | **0.001** | **-.0489809** | **-.0128098** |
| Other_race | | | | | | | |
| | Recommend | **-.0088418** | **.0100311** | **-0.88** | **0.378** | **-.0285025** | **.0108188** |
| Hs_grad | | | | | | | |
| | Recommend | **-.0280796** | **.0107582** | **-2.61** | **0.009** | **-.0491653** | **-.0069938** |
| Some_college | | | | | | | |
| | Recommend | **-.0102202** | **.0113962** | **-0.90** | **0.370** | **-.0325563** | **.012116** |
| College_grad | | | | | | | |
| | Recommend | **.0400168** | **.01396** | **2.87** | **0.004** | **.0126556** | **.0673779** |
| Income30 | | | | | | | |
| | Recommend | **.0132676** | **.0119632** | **1.11** | **0.267** | **-.0101799** | **.036715** |

| | | | | | | |
|---|---|---|---|---|---|---|
| Income50 | | | | | | |
| Recommend | -.0010344 | .0118166 | -0.09 | 0.930 | -.0241945 | .0221257 |
| Income100 | | | | | | |
| Recommend | -.0041966 | .0110409 | -0.38 | 0.704 | -.0258363 | .0174432 |
| Income75 | | | | | | |
| Recommend | .0149326 | .0096407 | 1.55 | 0.121 | -.0039629 | .0338281 |
| Midwest | | | | | | |
| Recommend | .0017512 | .0123842 | 0.14 | 0.888 | -.0225214 | .0260238 |
| South | | | | | | |
| Recommend | -.0263181 | .0135311 | -1.95 | 0.052 | -.0528386 | .0002023 |
| West | | | | | | |
| Recommend | .0034963 | .0125711 | 0.28 | 0.781 | -.0211426 | .0281353 |
| **Measurement** | | | | | | |
| rec_mcd | | | | | | |
| Recommend | 1 | (constrained) | | | | |
| _cons | 3.493113 | .0516385 | 67.65 | 0.000 | 3.391903 | 3.594323 |
| rec_mcd_fries | | | | | | |
| Recommend | .9468064 | .0262244 | 36.10 | 0.000 | .8954074 | .9982053 |
| _cons | 3.207989 | .0544311 | 58.94 | 0.000 | 3.101306 | 3.314672 |
| rec_mcd_food | | | | | | |
| Recommend | 1.009859 | .0209874 | 48.12 | 0.000 | .9687243 | 1.050994 |
| _cons | 3.443526 | .0520359 | 66.18 | 0.000 | 3.341538 | 3.545515 |
| mcdonalds_first | | | | | | |
| IV | 1 | (constrained) | | | | |
| _cons | .5123967 | .018551 | 27.62 | 0.000 | .4760373 | .5487561 |
| female | | | | | | |
| Female | 1 | (constrained) | | | | |
| _cons | .4986226 | .0185567 | 26.87 | 0.000 | .4622522 | .534993 |
| age_18_to_24 | | | | | | |
| Age18 | 1 | (constrained) | | | | |
| _cons | .0578512 | .0086646 | 6.68 | 0.000 | .040869 | .0748335 |
| age_25_to_34 | | | | | | |
| Age25 | 1 | (constrained) | | | | |
| _cons | .1528926 | .0133565 | 11.45 | 0.000 | .1267142 | .1790709 |
| age_35_to_44 | | | | | | |
| Age35 | 1 | (constrained) | | | | |
| _cons | .1707989 | .013967 | 12.23 | 0.000 | .143424 | .1981738 |
| age_45_to_54 | | | | | | |
| Age45 | 1 | (constrained) | | | | |
| _cons | .2134986 | .0152082 | 14.04 | 0.000 | .183691 | .2433062 |
| age_55_to_64 | | | | | | |
| Age55 | 1 | (constrained) | | | | |
| _cons | .1942149 | .0146819 | 13.23 | 0.000 | .1654389 | .2229909 |
| age_65_plus | | | | | | |
| Age65 | 1 | (constrained) | | | | |
| _cons | .1790634 | .0142295 | 12.58 | 0.000 | .151174 | .2069527 |

| | | | | | | |
|---|---|---|---|---|---|---|
| hispanic | | | | | | |
| Hispanic | 1 | (constrained) | | | | |
| _cons | .1143251 | .0118097 | 9.68 | 0.000 | .0911784 | .1374717 |
| black | | | | | | |
| Black | 1 | (constrained) | | | | |
| _cons | .1170799 | .0119326 | 9.81 | 0.000 | .0936925 | .1404673 |
| race_other | | | | | | |
| Other_race | 1 | (constrained) | | | | |
| _cons | .1404959 | .012897 | 10.89 | 0.000 | .1152183 | .1657735 |
| hs_grad | | | | | | |
| Hs_grad | 1 | (constrained) | | | | |
| _cons | .1680441 | .0138769 | 12.11 | 0.000 | .1408458 | .1952424 |
| some_college | | | | | | |
| Some_college | 1 | (constrained) | | | | |
| _cons | .1928375 | .0146423 | 13.17 | 0.000 | .1641392 | .2215358 |
| college_grad | | | | | | |
| College_grad | 1 | (constrained) | | | | |
| _cons | .6198347 | .0180159 | 34.40 | 0.000 | .5845242 | .6551452 |
| inc_30_to_50 | | | | | | |
| Income30 | 1 | (constrained) | | | | |
| _cons | .2203857 | .0153838 | 14.33 | 0.000 | .190234 | .2505373 |
| inc_50_to_75 | | | | | | |
| Income50 | 1 | (constrained) | | | | |
| _cons | .2121212 | .0151724 | 13.98 | 0.000 | .1823839 | .2418585 |
| inc_100_plus | | | | | | |
| Income100 | 1 | (constrained) | | | | |
| _cons | .177686 | .0141866 | 12.52 | 0.000 | .1498808 | .2054911 |
| inc_75_to_100 | | | | | | |
| Income75 | 1 | (constrained) | | | | |
| _cons | .1280992 | .0124033 | 10.33 | 0.000 | .1037891 | .1524093 |
| midwest | | | | | | |
| Midwest | 1 | (constrained) | | | | |
| _cons | .2424242 | .015905 | 15.24 | 0.000 | .2112511 | .2735974 |
| south | | | | | | |
| South | 1 | (constrained) | | | | |
| _cons | .3278237 | .0174218 | 18.82 | 0.000 | .2936776 | .3619698 |
| west | | | | | | |
| West | 1 | (constrained) | | | | |
| _cons | .2534435 | .0161437 | 15.70 | 0.000 | .2218024 | .2850846 |
| var(e.rec_mcd) | .2021798 | .0227953 | | | .1620939 | .252179 |
| var(e.rec_mcd_fries) | .5967726 | .0362547 | | | .5297822 | .672234 |
| var(e.rec_mcd_food) | .197742 | .0230181 | | | .1574037 | .2484178 |
| var(e.mcdonalds_first) | 0 | (constrained) | | | | |
| var(e.female) | 0 | (constrained) | | | | |
| var(e.age_18_to_24) | 0 | (constrained) | | | | |
| var(e.age_25_to_34) | 0 | (constrained) | | | | |
| var(e.age_35_to_44) | 0 | (constrained) | | | | |
| var(e.age_45_to_54) | 0 | (constrained) | | | | |
| var(e.age_55_to_64) | 0 | (constrained) | | | | |

```
      var(e.age_65_plus) |          0  (constrained)
         var(e.hispanic) |          0  (constrained)
            var(e.black) |          0  (constrained)
       var(e.race_other) |          0  (constrained)
          var(e.hs_grad) |          0  (constrained)
     var(e.some_college) |          0  (constrained)
     var(e.college_grad) |          0  (constrained)
     var(e.inc_30_to_50) |          0  (constrained)
     var(e.inc_50_to_75) |          0  (constrained)
     var(e.inc_100_plus) |          0  (constrained)
    var(e.inc_75_to_100) |          0  (constrained)
          var(e.midwest) |          0  (constrained)
            var(e.south) |          0  (constrained)
             var(e.west) |          0  (constrained)
               var(e.IV) |   .2466337   .0129533                      .2225086    .2733745
            var(e.Female) |   .2499957   .0131214                      .2255569    .2770825
             var(e.Age18) |   .0542958   .0028503                      .0489871    .0601799
             var(e.Age25) |   .1294726   .0067957                      .1168155     .143501
             var(e.Age35) |   .1406794   .0073863                      .1269225    .1559274
             var(e.Age45) |   .1678241   .0088087                      .1514177    .1860082
             var(e.Age55) |    .156276   .0082029                      .1409979    .1732096
             var(e.Age65) |   .1466309   .0076971                      .1322949    .1625203
          var(e.Hispanic) |   .1003443   .0052691                      .0905307    .1112216
             var(e.Black) |   .1017173   .0053431                       .091766    .1127478
       var(e.Other_race) |   .1206212   .0063313                       .108829    .1336912
          var(e.Hs_grad) |   .1384383   .0072698                      .1248984     .153446
     var(e.Some_college) |   .1554701   .0081605                      .1402709    .1723162
     var(e.College_grad) |   .2328634   .0122298                      .2100858    .2581104
         var(e.Income30) |   .1715106   .0090028                      .1547429    .1900954
         var(e.Income50) |   .1671239   .0087717                      .1507864    .1852317
        var(e.Income100) |   .1460831   .0076675                      .1318023    .1619112
         var(e.Income75) |   .1113032   .0058429                      .1004207     .123365
          var(e.Midwest) |   .1836494   .0096391                      .1656964    .2035477
            var(e.South) |   .2191545   .0115058                      .1977249    .2429065
             var(e.West) |   .1891887   .0099299                      .1706941    .2096872
          var(Recommend) |   1.733723   .1030471                      1.543075    1.947926
-------------------------+------------------------------------------------------------------

LR test of model vs. saturated: chi2(252) =   5025.36, Prob > chi2 = 0.0000

16 .
17 . restore

18 .
19 . **total sample**
20 . sem (Recommend -> rec_mcd@1 rec_mcd_fries rec_mcd_food) (IV -> mcdonalds_first@1) (Female -> female@1) (
   > Age18 -> age_18@1) (Age25 -> age_25@1) (Age35 -> age_35@1) (Age45 -> age_45@1) (Age55 -> age_55@1) (Age6
   > 5 -> age_65_plus@1) (Hispanic -> hispanic@1) (Black -> black@1) (Other_race -> race_other@1) (Hs_grad ->
   >  hs_grad@1) (Some_college -> some_college@1) (College_grad -> college_grad@1) (Income30 -> inc_30_to_50@
   > 1) (Income50 -> inc_50_to_75@1) (Income100 -> inc_100_plus@1) (Income75 -> inc_75_to_100@1) (Midwest ->
   > midwest@1) (South -> south@1) (West -> west@1) (Recommend -> IV Female Age18 Age25 Age35 Age45 Age55 Age
   > 65 Hispanic Black Other_race Hs_grad Some_college College_grad Income30 Income50 Income75 Income100 Midw
   > est South West), cov(e.mcdonalds_first@0 e.female@0 e.age_18@0 e.age_25@0 e.age_35@0 e.age_45@0 e.age_55
   > @0 e.age_65_plus@0 e.hispanic@0 e.black@0 e.race_other@0 e.hs_grad@0 e.some_college@0 e.college_grad@0 e
   > .inc_30_to_50@0 e.inc_50_to_75@0 e.inc_75_to_100@0 e.inc_100_plus@0 e.midwest@0 e.south@0 e.west@0)

   Endogenous variables

   Measurement:  rec_mcd rec_mcd_fries rec_mcd_food mcdonalds_first female age_18_to_24 age_25_to_34
                 age_35_to_44 age_45_to_54 age_55_to_64 age_65_plus hispanic black race_other hs_grad
                 some_college college_grad inc_30_to_50 inc_50_to_75 inc_100_plus inc_75_to_100 midwest
                 south west
   Latent:       IV Female Age18 Age25 Age35 Age45 Age55 Age65 Hispanic Black Other_race Hs_grad
                 Some_college College_grad Income30 Income50 Income100 Income75 Midwest South West
```

```
Exogenous variables

Latent:       Recommend

Fitting target model:

Iteration 0:   log likelihood =  -20995.84
Iteration 1:   log likelihood = -20995.576
Iteration 2:   log likelihood = -20995.576

Structural equation model                       Number of obs     =      1,537
Estimation method  = ml
Log likelihood     = -20995.576

 ( 1)  [mcdonalds_first]IV = 1
 ( 2)  [female]Female = 1
 ( 3)  [age_18_to_24]Age18 = 1
 ( 4)  [age_25_to_34]Age25 = 1
 ( 5)  [age_35_to_44]Age35 = 1
 ( 6)  [age_45_to_54]Age45 = 1
 ( 7)  [age_55_to_64]Age55 = 1
 ( 8)  [age_65_plus]Age65 = 1
 ( 9)  [hispanic]Hispanic = 1
 (10)  [black]Black = 1
 (11)  [race_other]Other_race = 1
 (12)  [hs_grad]Hs_grad = 1
 (13)  [some_college]Some_college = 1
 (14)  [college_grad]College_grad = 1
 (15)  [inc_30_to_50]Income30 = 1
 (16)  [inc_50_to_75]Income50 = 1
 (17)  [inc_100_plus]Income100 = 1
 (18)  [inc_75_to_100]Income75 = 1
 (19)  [midwest]Midwest = 1
 (20)  [south]South = 1
 (21)  [west]West = 1
 (22)  [rec_mcd]Recommend = 1
 (23)  [/]var(e.mcdonalds_first) = 0
 (24)  [/]var(e.female) = 0
 (25)  [/]var(e.age_18_to_24) = 0
 (26)  [/]var(e.age_25_to_34) = 0
 (27)  [/]var(e.age_35_to_44) = 0
 (28)  [/]var(e.age_45_to_54) = 0
 (29)  [/]var(e.age_55_to_64) = 0
 (30)  [/]var(e.age_65_plus) = 0
 (31)  [/]var(e.hispanic) = 0
 (32)  [/]var(e.black) = 0
 (33)  [/]var(e.race_other) = 0
 (34)  [/]var(e.hs_grad) = 0
 (35)  [/]var(e.some_college) = 0
 (36)  [/]var(e.college_grad) = 0
 (37)  [/]var(e.inc_30_to_50) = 0
 (38)  [/]var(e.inc_50_to_75) = 0
 (39)  [/]var(e.inc_100_plus) = 0
 (40)  [/]var(e.inc_75_to_100) = 0
 (41)  [/]var(e.midwest) = 0
 (42)  [/]var(e.south) = 0
 (43)  [/]var(e.west) = 0
```

| | OIM | | | | |
|---|---|---|---|---|---|
| | Coef. | Std. Err. | z | P>\|z\| | [95% Conf. Interval] |
| **Structural** | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| IV | Recommend | -.0451006 | .0098034 | -4.60 | 0.000 | -.0643149 | -.0258862 |
| Female | Recommend | .0098186 | .0098622 | 1.00 | 0.319 | -.009511 | .0291482 |
| Age18 | Recommend | -.0036871 | .004534 | -0.81 | 0.416 | -.0125736 | .0051994 |
| Age25 | Recommend | .0033574 | .0067359 | 0.50 | 0.618 | -.0098447 | .0165596 |
| Age35 | Recommend | -.0180793 | .007064 | -2.56 | 0.010 | -.0319244 | -.0042341 |
| Age45 | Recommend | -.0093389 | .0078481 | -1.19 | 0.234 | -.024721 | .0060431 |
| Age55 | Recommend | .0082205 | .0080835 | 1.02 | 0.309 | -.0076228 | .0240638 |
| Age65 | Recommend | .0151054 | .0081668 | 1.85 | 0.064 | -.0009012 | .031112 |
| Hispanic | Recommend | -.0269278 | .0061064 | -4.41 | 0.000 | -.0388961 | -.0149594 |
| Black | Recommend | -.0326678 | .0063104 | -5.18 | 0.000 | -.0450359 | -.0202997 |
| Other_race | Recommend | -.0017369 | .0064054 | -0.27 | 0.786 | -.0142913 | .0108176 |
| Hs_grad | Recommend | -.0311591 | .0074739 | -4.17 | 0.000 | -.0458077 | -.0165105 |
| Some_college | Recommend | -.0213964 | .0080388 | -2.66 | 0.008 | -.0371522 | -.0056406 |
| College_grad | Recommend | .0554846 | .0096032 | 5.78 | 0.000 | .0366627 | .0743065 |
| Income30 | Recommend | -.004837 | .0080424 | -0.60 | 0.548 | -.0205998 | .0109258 |
| Income50 | Recommend | .0078243 | .0082058 | 0.95 | 0.340 | -.0082587 | .0239073 |
| Income100 | Recommend | .0067086 | .0074753 | 0.90 | 0.369 | -.0079427 | .0213598 |
| Income75 | Recommend | .0205569 | .0064491 | 3.19 | 0.001 | .0079169 | .0331968 |
| Midwest | Recommend | .0021743 | .0082509 | 0.26 | 0.792 | -.0139971 | .0183457 |
| South | Recommend | -.0139639 | .0093585 | -1.49 | 0.136 | -.0323063 | .0043785 |
| West | Recommend | .0082668 | .0082516 | 1.00 | 0.316 | -.0079061 | .0244396 |

| | | | | | | |
|---|---|---|---|---|---|---|
| **Measurement** | | | | | | |
| rec_mcd | | | | | | |
| Recommend | 1 | (constrained) | | | | |
| _cons | 3.443071 | .0359861 | 95.68 | 0.000 | 3.372539 | 3.513602 |
| rec_mcd_fries | | | | | | |
| Recommend | .9627986 | .0177994 | 54.09 | 0.000 | .9279124 | .9976848 |
| _cons | 3.202342 | .0376801 | 84.99 | 0.000 | 3.128491 | 3.276194 |
| rec_mcd_food | | | | | | |
| Recommend | 1.020847 | .0144677 | 70.56 | 0.000 | .9924912 | 1.049204 |
| _cons | 3.407938 | .0360798 | 94.46 | 0.000 | 3.337222 | 3.478653 |
| mcdonalds_first | | | | | | |
| IV | 1 | (constrained) | | | | |
| _cons | .5009759 | .0127536 | 39.28 | 0.000 | .4759794 | .5259725 |
| female | | | | | | |
| Female | 1 | (constrained) | | | | |
| _cons | .4970722 | .0127534 | 38.98 | 0.000 | .472076 | .5220684 |
| age_18_to_24 | | | | | | |
| Age18 | 1 | (constrained) | | | | |
| _cons | .0559532 | .0058624 | 9.54 | 0.000 | .0444632 | .0674432 |
| age_25_to_34 | | | | | | |
| Age25 | 1 | (constrained) | | | | |
| _cons | .1346779 | .0087076 | 15.47 | 0.000 | .1176113 | .1517446 |
| age_35_to_44 | | | | | | |
| Age35 | 1 | (constrained) | | | | |
| _cons | .151594 | .0091476 | 16.57 | 0.000 | .1336651 | .1695229 |
| age_45_to_54 | | | | | | |
| Age45 | 1 | (constrained) | | | | |
| _cons | .1971373 | .0101477 | 19.43 | 0.000 | .1772481 | .2170264 |
| age_55_to_64 | | | | | | |
| Age55 | 1 | (constrained) | | | | |
| _cons | .2134027 | .0104506 | 20.42 | 0.000 | .19292 | .2338854 |
| age_65_plus | | | | | | |
| Age65 | 1 | (constrained) | | | | |
| _cons | .2199089 | .0105647 | 20.82 | 0.000 | .1992025 | .2406153 |
| hispanic | | | | | | |
| Hispanic | 1 | (constrained) | | | | |
| _cons | .1086532 | .0079379 | 13.69 | 0.000 | .0930951 | .1242113 |
| black | | | | | | |
| Black | 1 | (constrained) | | | | |
| _cons | .1177619 | .0082216 | 14.32 | 0.000 | .1016478 | .133876 |
| race_other | | | | | | |
| Other_race | 1 | (constrained) | | | | |
| _cons | .1197137 | .0082803 | 14.46 | 0.000 | .1034846 | .1359429 |
| hs_grad | | | | | | |
| Hs_grad | 1 | (constrained) | | | | |
| _cons | .1756669 | .0097064 | 18.10 | 0.000 | .1566426 | .1946911 |
| some_college | | | | | | |
| Some_college | 1 | (constrained) | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| _cons | .2108003 | .0104038 | 20.26 | 0.000 | .1904092 | .2311913 |
| college_grad | | | | | | |
| College_grad | 1 | (constrained) | | | | |
| _cons | .5946649 | .0125229 | 47.49 | 0.000 | .5701204 | .6192094 |
| inc_30_to_50 | | | | | | |
| Income30 | 1 | (constrained) | | | | |
| _cons | .2101496 | .010392 | 20.22 | 0.000 | .1897817 | .2305176 |
| inc_50_to_75 | | | | | | |
| Income50 | 1 | (constrained) | | | | |
| _cons | .2225114 | .0106093 | 20.97 | 0.000 | .2017176 | .2433052 |
| inc_100_plus | | | | | | |
| Income100 | 1 | (constrained) | | | | |
| _cons | .173715 | .0096638 | 17.98 | 0.000 | .1547744 | .1926557 |
| inc_75_to_100 | | | | | | |
| Income75 | 1 | (constrained) | | | | |
| _cons | .1223162 | .0083575 | 14.64 | 0.000 | .1059359 | .1386965 |
| midwest | | | | | | |
| Midwest | 1 | (constrained) | | | | |
| _cons | .2257645 | .0106642 | 21.17 | 0.000 | .2048631 | .2466659 |
| south | | | | | | |
| South | 1 | (constrained) | | | | |
| _cons | .3422251 | .012102 | 28.28 | 0.000 | .3185056 | .3659446 |
| west | | | | | | |
| West | 1 | (constrained) | | | | |
| _cons | .2257645 | .0106642 | 21.17 | 0.000 | .2048631 | .2466659 |
| var(e.rec_mcd) | .2384021 | .0159258 | | | .2091451 | .2717517 |
| var(e.rec_mcd_fries) | .5581361 | .023716 | | | .5135366 | .606609 |
| var(e.rec_mcd_food) | .1749709 | .0153091 | | | .1473974 | .2077027 |
| var(e.mcdonalds_first) | 0 | (constrained) | | | | |
| var(e.female) | 0 | (constrained) | | | | |
| var(e.age_18_to_24) | 0 | (constrained) | | | | |
| var(e.age_25_to_34) | 0 | (constrained) | | | | |
| var(e.age_35_to_44) | 0 | (constrained) | | | | |
| var(e.age_45_to_54) | 0 | (constrained) | | | | |
| var(e.age_55_to_64) | 0 | (constrained) | | | | |
| var(e.age_65_plus) | 0 | (constrained) | | | | |
| var(e.hispanic) | 0 | (constrained) | | | | |
| var(e.black) | 0 | (constrained) | | | | |
| var(e.race_other) | 0 | (constrained) | | | | |
| var(e.hs_grad) | 0 | (constrained) | | | | |
| var(e.some_college) | 0 | (constrained) | | | | |
| var(e.college_grad) | 0 | (constrained) | | | | |
| var(e.inc_30_to_50) | 0 | (constrained) | | | | |
| var(e.inc_50_to_75) | 0 | (constrained) | | | | |
| var(e.inc_100_plus) | 0 | (constrained) | | | | |
| var(e.inc_75_to_100) | 0 | (constrained) | | | | |
| var(e.midwest) | 0 | (constrained) | | | | |
| var(e.south) | 0 | (constrained) | | | | |
| var(e.west) | 0 | (constrained) | | | | |
| var(e.IV) | .2464353 | .0088958 | | | .2296024 | .2645024 |
| var(e.Female) | .2498225 | .0090121 | | | .2327692 | .2681252 |
| var(e.Age18) | .0527986 | .0019046 | | | .0491945 | .0566667 |
| var(e.Age25) | .11652 | .0042032 | | | .1085664 | .1250564 |
| var(e.Age35) | .1280406 | .0046198 | | | .1192987 | .137423 |

| | | | | |
|---|---|---|---|---|
| var(e.Age45) | .1581214 | .0057041 | .1473276 | .169706 |
| var(e.Age55) | .1677436 | .0060512 | .1562931 | .180033 |
| var(e.Age65) | .1711492 | .0061745 | .1594653 | .1836892 |
| var(e.Hispanic) | .0955773 | .0034499 | .0890492 | .102584 |
| var(e.Black) | .1020243 | .0036835 | .0950542 | .1095055 |
| var(e.Other_race) | .1053771 | .0038012 | .098184 | .113097 |
| var(e.Hs_grad) | .143107 | .0051653 | .133333 | .1535975 |
| var(e.Some_college) | .1655614 | .0059737 | .1542576 | .1776936 |
| var(e.College_grad) | .2356449 | .0085101 | .219542 | .2529289 |
| var(e.Income30) | .1659458 | .0059862 | .1546182 | .1781032 |
| var(e.Income50) | .1728928 | .0062369 | .1610909 | .1855594 |
| var(e.Income100) | .1434593 | .0051751 | .1336665 | .1539694 |
| var(e.Income75) | .1066146 | .0038472 | .0993347 | .1144279 |
| var(e.Midwest) | .1747866 | .006305 | .1628557 | .1875916 |
| var(e.South) | .2247655 | .0081085 | .2094219 | .2412331 |
| var(e.West) | .1746751 | .0063012 | .1627515 | .1874724 |
| var(Recommend) | 1.752013 | .072532 | 1.615468 | 1.9001 |

LR test of model vs. saturated: chi2(252) = 10387.30, Prob > chi2 = 0.0000

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21 .
   end of do-file

22 .
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