

Era Comparison

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5/2/2018

```
## Installing package into '/Users/george/Documents/School/UW/Thesis/thesis_R/packrat/lib/x86_64-apple-c
## (as 'lib' is unspecified)

##
## The downloaded binary packages are in
## /var/folders/6s/cv2xpvs1978z4cyr4w1sl0h0000gn/T//Rtmp27DNtL/downloaded_packages

## Warning: package 'haven' was built under R version 3.4.3

## Installing package into '/Users/george/Documents/School/UW/Thesis/thesis_R/packrat/lib/x86_64-apple-c
## (as 'lib' is unspecified)

##
## The downloaded binary packages are in
## /var/folders/6s/cv2xpvs1978z4cyr4w1sl0h0000gn/T//Rtmp27DNtL/downloaded_packages

## Warning: package 'dplyr' was built under R version 3.4.2

##
## Attaching package: 'dplyr'

## The following objects are masked from 'package:stats':
##
## filter, lag

## The following objects are masked from 'package:base':
##
## intersect, setdiff, setequal, union

## Installing package into '/Users/george/Documents/School/UW/Thesis/thesis_R/packrat/lib/x86_64-apple-c
## (as 'lib' is unspecified)

##
## The downloaded binary packages are in
## /var/folders/6s/cv2xpvs1978z4cyr4w1sl0h0000gn/T//Rtmp27DNtL/downloaded_packages

## Installing package into '/Users/george/Documents/School/UW/Thesis/thesis_R/packrat/lib/x86_64-apple-c
## (as 'lib' is unspecified)

##
## There is a binary version available (and will be installed) but
## the source version is later:
## binary source
## MASS 7.3-49 7.3-50
##
##
## The downloaded binary packages are in
## /var/folders/6s/cv2xpvs1978z4cyr4w1sl0h0000gn/T//Rtmp27DNtL/downloaded_packages

## Warning: package 'MASS' was built under R version 3.4.3

##
## Attaching package: 'MASS'
```

```
## The following object is masked from 'package:dplyr':  
##  
##      select  
## Installing package into '/Users/george/Documents/School/UW/Thesis/thesis_R/packrat/lib/x86_64-apple-  
## (as 'lib' is unspecified)  
##  
## The downloaded binary packages are in  
##  /var/folders/6s/cv2xpvws1978z4cyr4w1sl0h0000gn/T//Rtmp27DNtL/downloaded_packages  
## Warning: package 'pscl' was built under R version 3.4.2  
## Classes and Methods for R developed in the  
## Political Science Computational Laboratory  
## Department of Political Science  
## Stanford University  
## Simon Jackman  
## hurdle and zeroinfl functions by Achim Zeileis
```

```

# Era Comparison 5/2/18 ## Probability: Binge [0][1+] FAMILY INCOME: era_1

##
## Call:
## lm(formula = binge2cat ~ faminc_mid + treated + alctry + evermj +
##      evercoc + edu4cat + age + sex + marital + dependents + era +
##      faminc_mid * treated + edu4cat * treated, data = era_1, na.action = na.omit)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.7660 -0.2714 -0.1483  0.2962  1.1469
##
## Coefficients: (1 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    0.5220896   0.0117791   44.323 < 2e-16 ***
## faminc_mid      0.0022604   0.0007475    3.024  0.0025 **
## treatedDistant -0.0177456   0.0233524   -0.760  0.4473
## treatedRecent   0.0444404   0.0334474    1.329  0.1840
## alctry          -0.0065284   0.0004677  -13.958 < 2e-16 ***
## evermjy         0.0860393   0.0044389   19.383 < 2e-16 ***
## evercocy         0.1010978   0.0057789   17.494 < 2e-16 ***
## edu4catHS       -0.0149686   0.0065033   -2.302  0.0214 *
## edu4catSome C   -0.0554512   0.0068878   -8.051 8.42e-16 ***
## edu4catC Grad   -0.1011406   0.0070933  -14.259 < 2e-16 ***
## age 30-34       -0.0386576   0.0060658   -6.373 1.87e-10 ***
## age 35-49       -0.1143448   0.0056712  -20.163 < 2e-16 ***
## age 50-64       -0.1679149   0.0071906  -23.352 < 2e-16 ***
## age 65+         -0.2423412   0.0086650  -27.968 < 2e-16 ***
## sex f           -0.1536322   0.0038022  -40.406 < 2e-16 ***
## marital widowed  0.0458628   0.0099751    4.598 4.28e-06 ***
## marital divorced 0.0752682   0.0057599   13.068 < 2e-16 ***
## marital never     0.0783502   0.0058617   13.366 < 2e-16 ***
## dependents1     -0.0462674   0.0055960   -8.268 < 2e-16 ***
## dependents2     -0.0540851   0.0057033   -9.483 < 2e-16 ***
## dependents3+    -0.0578040   0.0071112   -8.129 4.44e-16 ***
## era              NA              NA      NA      NA
## faminc_mid:treatedDistant -0.0015481  0.0031652  -0.489  0.6248
## faminc_mid:treatedRecent -0.0159114  0.0062013  -2.566  0.0103 *
## treatedDistant:edu4catHS  0.0034264  0.0254690   0.135  0.8930
## treatedRecent:edu4catHS  0.0379739  0.0390764   0.972  0.3312
## treatedDistant:edu4catSome C 0.0048224  0.0270143   0.179  0.8583
## treatedRecent:edu4catSome C 0.0031208  0.0430569   0.072  0.9422
## treatedDistant:edu4catC Grad 0.0337290  0.0307446   1.097  0.2726
## treatedRecent:edu4catC Grad 0.1100525  0.0562173   1.958  0.0503 .
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.4037 on 49125 degrees of freedom
## Multiple R-squared:  0.1326, Adjusted R-squared:  0.1321
## F-statistic: 268.2 on 28 and 49125 DF, p-value: < 2.2e-16

```

```

## Probability: Binge [0][1+] FAMILY INCOME: Era_2

##
## Call:
## lm(formula = binge2cat ~ faminc_mid + treated + alctry + evermj +
##      evercoc + edu4cat + age + sex + marital + dependents + era +
##      faminc_mid * treated + edu4cat * treated, data = era_2, na.action = na.omit)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -0.7911 -0.3058 -0.1630  0.4455  1.2725
##
## Coefficients: (1 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)    0.5578147   0.0128953   43.257 < 2e-16 ***
## faminc_mid      0.0038955   0.0007233    5.386 7.24e-08 ***
## treatedDistant  0.0063395   0.0197783    0.321 0.74857
## treatedRecent  -0.0517157   0.0290832   -1.778 0.07538 .
## alctry         -0.0072513   0.0004798  -15.114 < 2e-16 ***
## evermjyes      0.0941134   0.0044983   20.922 < 2e-16 ***
## evercocyes     0.0977873   0.0054463   17.955 < 2e-16 ***
## edu4catHS     -0.0101609   0.0069148   -1.469 0.14172
## edu4catSome C  -0.0473577   0.0071279   -6.644 3.08e-11 ***
## edu4catC Grad  -0.0712126   0.0073437   -9.697 < 2e-16 ***
## age 30-34      -0.0472972   0.0070066   -6.750 1.49e-11 ***
## age 35-49      -0.1188668   0.0061167  -19.433 < 2e-16 ***
## age 50-64      -0.2178992   0.0073624  -29.596 < 2e-16 ***
## age 65+        -0.2610253   0.0091137  -28.641 < 2e-16 ***
## sex f          -0.1551979   0.0039023  -39.771 < 2e-16 ***
## marital widowed  0.0459186   0.0104975    4.374 1.22e-05 ***
## marital divorced 0.0441732   0.0056307    7.845 4.41e-15 ***
## marital never    0.0612069   0.0056555   10.823 < 2e-16 ***
## dependents1     -0.0417584   0.0056916   -7.337 2.22e-13 ***
## dependents2     -0.0279170   0.0059318   -4.706 2.53e-06 ***
## dependents3+    -0.0470728   0.0071552   -6.579 4.79e-11 ***
## era              NA              NA      NA      NA
## faminc_mid:treatedDistant -0.0013728  0.0025299  -0.543 0.58738
## faminc_mid:treatedRecent -0.0009188  0.0045270  -0.203 0.83917
## treatedDistant:edu4catHS -0.0071297  0.0223763  -0.319 0.75001
## treatedRecent:edu4catHS -0.0292117  0.0355833  -0.821 0.41169
## treatedDistant:edu4catSome C -0.0007222  0.0234665  -0.031 0.97545
## treatedRecent:edu4catSome C 0.0028117  0.0371875   0.076 0.93973
## treatedDistant:edu4catC Grad 0.0327597  0.0267867   1.223 0.22134
## treatedRecent:edu4catC Grad 0.1300989  0.0488564   2.663 0.00775 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.4223 on 50618 degrees of freedom
## Multiple R-squared:  0.131, Adjusted R-squared:  0.1305
## F-statistic: 272.6 on 28 and 50618 DF, p-value: < 2.2e-16

```

```

## Negative Binomial: Binge 0-30 FAMILY INCOME Era_1

##
## Call:
## glm.nb(formula = dr5day ~ faminc_mid + treated + alctry + evermj +
##         evercoc + edu4cat + age + sex + marital + dependents + era +
##         faminc_mid * treated + edu4cat * treated, data = era_1, na.action = na.omit,
##         init.theta = 0.189142979, link = log)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -1.3522  -0.7885  -0.6268  -0.3746   7.6463
##
## Coefficients: (1 not defined because of singularities)
##              Estimate Std. Error z value Pr(>|z|)
## (Intercept)    1.607091   0.080847  19.878 < 2e-16 ***
## faminc_mid     -0.002471   0.004973  -0.497 0.619272
## treatedDistant  0.334323   0.140043   2.387 0.016973 *
## treatedRecent   0.763234   0.198184   3.851 0.000118 ***
## alctry         -0.065767   0.003467 -18.969 < 2e-16 ***
## evermjyes       0.542455   0.029147  18.611 < 2e-16 ***
## evercocyes      0.506635   0.035590  14.235 < 2e-16 ***
## edu4catHS      -0.070914   0.042565  -1.666 0.095710 .
## edu4catSome C  -0.348540   0.045364  -7.683 1.55e-14 ***
## edu4catC Grad  -0.695170   0.047094 -14.761 < 2e-16 ***
## age 30-34      -0.148476   0.038869  -3.820 0.000134 ***
## age 35-49      -0.306701   0.036465  -8.411 < 2e-16 ***
## age 50-64      -0.502204   0.047258 -10.627 < 2e-16 ***
## age 65+        -0.996768   0.060092 -16.587 < 2e-16 ***
## sex f          -1.084677   0.025159 -43.112 < 2e-16 ***
## marital widowed  0.058793   0.073939   0.795 0.426524
## marital divorced 0.508850   0.036997  13.754 < 2e-16 ***
## marital never    0.320302   0.037493   8.543 < 2e-16 ***
## dependents1     -0.310237   0.036770  -8.437 < 2e-16 ***
## dependents2     -0.366337   0.037528  -9.762 < 2e-16 ***
## dependents3+    -0.328213   0.046761  -7.019 2.24e-12 ***
## era              NA              NA      NA      NA
## faminc_mid:treatedDistant -0.015102  0.019166  -0.788 0.430730
## faminc_mid:treatedRecent -0.115114  0.037420  -3.076 0.002096 **
## treatedDistant:edu4catHS -0.036482  0.152100  -0.240 0.810441
## treatedRecent:edu4catHS -0.031703  0.231082  -0.137 0.890877
## treatedDistant:edu4catSome C -0.141263  0.162417  -0.870 0.384435
## treatedRecent:edu4catSome C  0.148626  0.255291   0.582 0.560443
## treatedDistant:edu4catC Grad  0.296674  0.185398   1.600 0.109555
## treatedRecent:edu4catC Grad  0.538603  0.334860   1.608 0.107739
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for Negative Binomial(0.1891) family taken to be 1)
##
##      Null deviance: 35360  on 49153  degrees of freedom
## Residual deviance: 28359  on 49125  degrees of freedom
## AIC: 104402
##

```

```
## Number of Fisher Scoring iterations: 1
##
##
##           Theta: 0.18914
##       Std. Err.: 0.00250
##
## 2 x log-likelihood: -104341.69800
```

```
## Negative Binomial: Binge 0-30 FAMILY INCOME Era_2

##
## Call:
## glm.nb(formula = dr5day ~ faminc_mid + treated + alctry + evermj +
##         evercoc + edu4cat + age + sex + marital + dependents + era +
##         faminc_mid * treated + edu4cat * treated, data = era_2, na.action = na.omit,
##         init.theta = 0.2053606877, link = log)
##
## Deviance Residuals:
##      Min       1Q   Median       3Q      Max
## -1.3387  -0.8468  -0.6760  -0.2212   7.7218
##
## Coefficients: (1 not defined because of singularities)
##              Estimate Std. Error z value Pr(>|z|)
## (Intercept)    1.566516   0.079356  19.740 < 2e-16 ***
## faminc_mid     -0.003653   0.004312  -0.847 0.396930
## treatedDistant  0.170599   0.108613   1.571 0.116249
## treatedRecent  -0.076025   0.159541  -0.477 0.633701
## alctry         -0.060411   0.003181 -18.994 < 2e-16 ***
## evermjyes      0.622876   0.026878  23.174 < 2e-16 ***
## evercocyes     0.493858   0.030454  16.216 < 2e-16 ***
## edu4catHS      -0.033736   0.040526  -0.832 0.405163
## edu4catSome C  -0.330432   0.042092  -7.850 4.15e-15 ***
## edu4catC Grad  -0.503445   0.043561 -11.557 < 2e-16 ***
## age 30-34      -0.139559   0.040339  -3.460 0.000541 ***
## age 35-49      -0.283609   0.035252  -8.045 8.61e-16 ***
## age 50-64      -0.590971   0.043009 -13.741 < 2e-16 ***
## age 65+        -0.973167   0.056321 -17.279 < 2e-16 ***
## sex f          -0.917165   0.023088 -39.725 < 2e-16 ***
## marital widowed  0.261713   0.066124   3.958 7.56e-05 ***
## marital divorced 0.254422   0.033102   7.686 1.52e-14 ***
## marital never    0.212824   0.032944   6.460 1.05e-10 ***
## dependents1     -0.229985   0.033486  -6.868 6.50e-12 ***
## dependents2     -0.217502   0.034898  -6.232 4.59e-10 ***
## dependents3+    -0.369552   0.042642  -8.666 < 2e-16 ***
## era              NA          NA          NA          NA
## faminc_mid:treatedDistant -0.017333  0.013948  -1.243 0.213975
## faminc_mid:treatedRecent  0.039875  0.024687   1.615 0.106260
## treatedDistant:edu4catHS  0.040338  0.122800   0.328 0.742546
## treatedRecent:edu4catHS  -0.298657  0.195540  -1.527 0.126674
## treatedDistant:edu4catSome C 0.247275  0.129114   1.915 0.055471 .
## treatedRecent:edu4catSome C 0.236686  0.203585   1.163 0.244997
## treatedDistant:edu4catC Grad 0.383614  0.147595   2.599 0.009347 **
## treatedRecent:edu4catC Grad 0.825234  0.264946   3.115 0.001841 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## (Dispersion parameter for Negative Binomial(0.2054) family taken to be 1)
##
##      Null deviance: 39142  on 50646  degrees of freedom
## Residual deviance: 32284  on 50618  degrees of freedom
## AIC: 122273
##
```

```
## Number of Fisher Scoring iterations: 1
##
##
##           Theta: 0.20536
##       Std. Err.: 0.00246
##
## 2 x log-likelihood: -122213.19700
```