

SI2.

PIP - Code and Results

Author: (*redacted*)

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Used R packages

```
library("rmarkdown")
library("knitr")
library("tinytex")
library("tidyverse")
library("broom")
library("fs")
library("usethis")
library("readxl")
library("car")
library("dunn.test")
library("lattice")
library("dplyr")
library("MASS")
```

Data summary

```
index1 <- 1:ncol(data)
data[, index1] <- lapply(data[, index1], as.factor)
str(data)
```

```
## tibble [400 x 30] (S3: tbl_df/tbl/data.frame)
##  $ Response ID      : Factor w/ 400 levels "65","66","79",...: 1 2 3 4 5 6 7 8 9 10 ...
##  $ gender            : Factor w/ 3 levels "1","2","3": 2 1 2 1 1 1 2 1 1 2 ...
##  $ age               : Factor w/ 3 levels "1","2","3": 3 3 3 3 3 2 2 3 3 2 ...
##  $ living_situation  : Factor w/ 5 levels "1","2","3","4",...: 1 4 4 4 1 1 4 4 1 4 ...
##  $ annual_income     : Factor w/ 11 levels "1","2","3","4",...: 1 6 5 6 11 2 3 11 11 5 ...
##  $ education_level   : Factor w/ 5 levels "2","3","4","5",...: 3 4 3 3 2 3 4 5 4 4 ...
##  $ vehicle_ownership : Factor w/ 2 levels "1","2": 2 2 2 2 1 1 1 2 2 2 ...
##  $ postcode          : Factor w/ 6 levels "1","2","3","4",...: 2 2 1 6 1 1 1 4 6 4 ...
##  $ bottles_avgweek   : Factor w/ 7 levels "1","2","3","4",...: 3 2 2 3 2 2 5 4 3 7 ...
##  $ film_avgweek       : Factor w/ 7 levels "1","2","3","4",...: 2 2 3 4 3 6 7 3 7 ...
##  $ tubs_avgweek       : Factor w/ 7 levels "1","2","3","4",...: 1 6 4 3 3 2 6 4 2 7 ...
##  $ bags_avgweek       : Factor w/ 7 levels "1","2","3","4",...: 1 1 1 1 1 1 1 1 1 2 ...
##  $ bottles_reuses     : Factor w/ 5 levels "1","2","3","4",...: 1 3 4 1 2 5 5 1 3 1 ...
##  $ film_reuses        : Factor w/ 5 levels "1","2","3","4",...: 1 1 1 3 1 3 1 1 1 1 ...
##  $ tubs_reuses        : Factor w/ 5 levels "1","2","3","4",...: 5 3 3 2 5 5 5 5 1 1 ...
##  $ bags_reuses        : Factor w/ 5 levels "1","2","3","4",...: 5 4 4 3 1 4 5 5 4 1 ...
##  $ bottles_disposal   : Factor w/ 9 levels "1","2","3","4",...: 2 2 2 2 2 2 2 2 1 ...
##  $ film_disposal      : Factor w/ 9 levels "1","2","3","4",...: 9 1 1 2 1 2 1 1 1 ...
##  $ tubs_disposal      : Factor w/ 9 levels "1","2","3","4",...: 7 2 1 2 2 2 2 2 1 ...
##  $ bags_disposal      : Factor w/ 9 levels "1","2","3","4",...: 7 1 1 2 2 2 3 7 1 ...
##  $ attitude_disposal  : Factor w/ 7 levels "1","2","3","4",...: 4 7 5 3 4 4 5 5 4 ...
##  $ plasticwaste_ocean : Factor w/ 5 levels "1","2","3","4",...: 3 5 3 3 3 4 4 4 4 5 ...
##  $ littering_portsmouth : Factor w/ 5 levels "1","2","3","4",...: 2 1 2 2 2 3 2 3 2 2 ...
##  $ barrier_recycling   : Factor w/ 12 levels "1","2","3","4",...: 3 7 12 2 1 4 1 6 2 4 ...
##  $ barrier_reducing    : Factor w/ 8 levels "1","2","3","4",...: 3 2 8 1 1 4 4 8 4 8 ...
##  $ main_con_plastic    : Factor w/ 11 levels "1","2","3","4",...: 3 1 1 1 1 1 2 2 3 3 ...
##  $ attitude_plastic    : Factor w/ 4 levels "1","2","3","4": 3 1 2 2 3 2 3 2 3 3 ...
##  $ choice_plastic      : Factor w/ 4 levels "1","2","3","4": 3 2 2 3 3 3 3 2 4 2 ...
##  $ individual_actions  : Factor w/ 5 levels "1","2","3","4",...: 3 1 2 1 3 3 2 2 2 5 ...
##  $ awareness_zerowaste : Factor w/ 6 levels "1","2","3","4",...: 5 5 6 5 4 6 4 5 6 5 ...
```

```
summary(data)
```

```
## Response ID gender age living_situation annual_income education_level
## 65 : 1 1:158 1:103 1: 92 6 :76 2: 2
## 66 : 1 2:239 2:176 2: 51 5 :52 3: 97
## 79 : 1 3: 3 3:121 3: 40 4 :46 4:130
## 80 : 1 4:213 3 :45 5:135
## 81 : 1 5: 4 7 :45 6: 36
## 83 : 1 1 :42
## (Other):394 (Other):94
## vehicle_ownership postcode bottles_avgweek film_avgweek tubs_avgweek
## 1:118 1:69 1: 12 1: 12 1: 12
## 2:282 2:66 2:137 2: 84 2:108
## 3:49 3:134 3:122 3:143
## 4:82 4: 74 4:113 4: 85
## 5:72 5: 19 5: 39 5: 29
## 6:62 6: 14 6: 18 6: 13
## 7: 10 7: 12 7: 10
## bags_avgweek bottles_reuses film_reuses tubs_reuses bags_reuses
## 1:232 1: 71 1:236 1: 61 1: 31
## 2: 77 2: 66 2: 83 2: 41 2: 44
## 3: 43 3:129 3: 54 3: 97 3: 93
## 4: 19 4: 57 4: 12 4: 58 4: 70
## 5: 14 5: 77 5: 15 5:143 5:162
## 6: 8
## 7: 7
## bottles_disposal film_disposal tubs_disposal bags_disposal attitude_disposal
## 2 :328 1 :265 2 :211 1 :143 1: 27
## 1 : 27 2 : 92 1 : 86 2 : 92 2: 20
## 7 : 16 3 : 17 7 : 42 7 : 83 3: 41
## 3 : 10 4 : 6 3 : 29 3 : 29 4: 73
## 4 : 7 8 : 6 4 : 12 8 : 23 5:114
## 5 : 5 9 : 6 8 : 7 6 : 11 6: 56
## (Other): 7 (Other): 8 (Other): 13 (Other): 19 7: 69
## plasticwaste_ocean littering_portsmouth barrier_recycling barrier_reducing
## 1: 19 1:173 1 :115 1 :90
## 2:104 2:162 2 : 62 2 :85
## 3:200 3: 53 12 : 57 3 :85
## 4: 60 4: 8 4 : 35 5 :40
## 5: 17 5: 4 6 : 33 8 :40
## 3 : 31 4 :39
## (Other): 67 (Other):21
## main_con_plastic attitude_plastic choice_plastic individual_actions
## 1 :119 1:102 1: 46 1:142
## 2 : 97 2:218 2:208 2:191
## 3 : 88 3: 58 3:116 3: 43
## 4 : 26 4: 22 4: 30 4: 11
## 7 : 22 5: 13
## 5 : 14
## (Other): 34
## awareness_zerowaste
## 1: 14
## 2: 30
```

```
## 3: 24
## 4: 88
## 5:175
## 6: 69
##
```

Variable labeling

```
data$gender <- recode_factor(data$gender,
  "1" = "Male",
  "2" = "Female",
  "3" = "Other")
data$age <- recode_factor(data$age, "1" = "30 and under",
  "2" = "31-50",
  "3" = "50+")
data$living_situation <- recode_factor(data$living_situation,
  "1" = "I live alone",
  "2" = "I live with my parents/family",
  "3" = "I live in a house-/ flat-share",
  "4" = "I live with my partner/children",
  "5" = "Other")
data$annual_income <- recode_factor(data$annual_income,
  "1" = "Less than £12,000",
  "2" = "£12,000-14,999",
  "3" = "£15,000-19,999",
  "4" = "£20,000-24,999",
  "5" = "£25,000-34,999",
  "6" = "£35,000-49,999",
  "7" = "£50,000-74,999",
  "8" = "£100,000-149,000",
  "9" = "£15,000-19,999",
  "10" = "£150,000 or more",
  "11" = "Prefer not to say")
data$education_level <- recode_factor(data$education_level,
  "1" = "None",
  "2" = "Primary",
  "3" = "Secondary",
  "4" = "High school",
  "5" = "Undergraduate",
  "6" = "Postgraduate")
data$vehicle_ownership <- recode_factor(data$vehicle_ownership,
  "1" = "No vehicle",
  "2" = "1 or more vehicles")
data$postcode <- recode_factor(data$postcode,
  "1" = "P01",
  "2" = "P02",
  "3" = "P03",
  "4" = "P04",
  "5" = "P05",
  "6" = "P06")
```

Label check

See the recoded factor levels below.

```
summary(data)
```

```
## Response ID      gender      age
## 65      : 1  Male :158  30 and under:103
## 66      : 1  Female:239  31-50      :176
## 79      : 1  Other : 3  50+        :121
## 80      : 1
## 81      : 1
## 83      : 1
## (Other):394
##
##           living_situation      annual_income
## I live alone      : 92  £35,000-49,999 :76
## I live with my parents/family : 51  £15,000-19,999 :63
## I live in a house-/ flat-share : 40  £25,000-34,999 :52
## I live with my partner/children:213  £20,000-24,999 :46
## Other              : 4  £50,000-74,999 :45
##                      Less than £12,000:42
##                      (Other)          :76
##
##           education_level      vehicle_ownership      postcode      bottles_avgweek
## Primary      : 2  No vehicle      :118  P01:69  None      : 12
## Secondary    : 97  1 or more vehicles:282  P02:66  1-2        :137
## High school  :130                      P03:49  3-5        :134
## Undergraduate:135                      P04:82  6-10       : 74
## Postgraduate : 36                      P05:72  11-15      : 19
##                      P06:62  16+         : 14
##                      I don't know: 10
##
##           film_avgweek      tubs_avgweek      bags_avgweek      bottles_reuses
## None      : 12  None      : 12  None      :232  Never      : 71
## 1-2       : 84  1-2       :108  1-2       : 77  Once       : 66
## 3-5       :122  3-5       :143  3-5       : 43  2-4 times :129
## 6-10      :113  6-10      : 85  6-10      : 19  5-10 times: 57
## 11-15     : 39  11-15     : 29  11-15     : 14  More often: 77
## 16+       : 18  16+       : 13  16+       : 8
## I don't know: 12  I don't know: 10  I don't know: 7
##
##           film_reuses      tubs_reuses      bags_reuses
## Never      :236  Never      : 61  Never      : 31
## Once       : 83  Once       : 41  Once       : 44
## 2-4 times  : 54  2-4 times : 97  2-4 times : 93
## 5-10 times : 12  5-10 times: 58  5-10 times: 70
## More often: 15  More often:143  More often:162
##
##
##
##           bottles_disposal      film_disposal
## Recycling bin      :328  General waste bin :265
## General waste bin  : 27  Recycling bin      : 92
## Indefinite storage : 16  Recycling centre   : 17
## Recycling centre   : 10  Specialist waste collection: 6
## Specialist waste collection: 7  Other              : 6
## Landfill          : 5  I don't know      : 6
## (Other)           : 7  (Other)           : 8
```

```

##          tubs_disposal          bags_disposal
## Recycling bin          :211  General waste bin    :143
## General waste bin      : 86  Recycling bin    : 92
## Indefinite storage     : 42  Indefinite storage : 83
## Recycling centre       : 29  Recycling centre  : 29
## Specialist waste collection: 12  Other            : 23
## Other                  : 7   Deposit return scheme: 11
## (Other)                : 13  (Other)          : 19
##          attitude_disposal    plasticwaste_ocean littering_portsmouth
## 1 (Not concerned): 27    Always          : 19    1:173
## 2                  : 20    Most of the time:104    2:162
## 3                  : 41    Sometimes        :200    3: 53
## 4                  : 73    Rarely            : 60    4: 8
## 5                  :114    Never              : 17    5: 4
## 6                  : 56
## 7 (Very concerned: 69
##          barrier_recycling    barrier_reducing
## Council collection      :115  Limited alternatives :90
## Unclear information     : 62  No SUP-free alternatives:85
## Already doing everything: 57  Alternatives expensive :85
## No local facilities     : 35  Forgetting reusables  :40
## Ends up in landfills    : 33  No barriers           :40
## Difficult transport     : 31  Limited functioning    :39
## (Other)                 : 67  (Other)               :21
##          main_con_plastic
## Value for money         :119
## Price                   : 97
## Quality                 : 88
## Deals/discounts         : 26
## Ease of recycling packaging: 22
## Use-by-dates/longevity  : 14
## (Other)                 : 34
##          attitude_plastic
## Will go out of their way to avoid :102
## If option is readily available, will avoid:218
## Will avoid only without extra costs : 58
## Not a priority          : 22
##
##
##          choice_plastic    individual_actions awareness_zerowaste
## Always                  : 46  Yes, definitely    :142    1: 14
## As often as they can    :208  Yes, probably      :191    2: 30
## If cheaper or preferred:116  No, probably not   : 43    3: 24
## Rarely or never         : 30  No, definitely not: 11    4: 88
##                          :     I don't know      : 13    5:175
##                          :     :                6: 69
##
##          littering          zerowaste
## Strongly agree          :173  Yes, shops regularly : 14
## Agree                   :162  Yes, shops occasionally : 30
## Neither agree nor disagree: 53  Yes, visited at least once : 24
## Disagree                : 8   Yes, never visited      : 88
## Strongly disagree       : 4   No, but would like to shop there:175

```

```
##                               No, not likely to shop there      : 69
##
```

Statistical analysis

Normality and chosen tests

The data is categorical-ordinal. Categorical data is not normally distributed and, thus, non-parametric tests were chosen.

Pearson's Chi-squared tests for independence were chosen. They were first run as normal without simulations. Monte Carlo simulation was then used if the cell size was too small.

Crosstab compilations

‘Age’ factor:

```
age.choice <- table(data$age, data$choice_plastic)
age.barrier <- table(data$age, data$barrier_recycling)
age.barrier2 <- table(data$age, data$barrier_reducing)
age.mainconsid <- table(data$age, data$main_con_plastic)
age.litter <- table(data$age, data$littering)
age.attitude <- table(data$age, data$attitude_disposal)
age.ocean <- table(data$age, data$plasticwaste_ocean)
age.actions <- table(data$age, data$individual_actions)
age.attplast <- table(data$age, data$attitude_plastic)
age.zerow <- table(data$age, data$zerowaste)

## SUPs
age.bottpurchase <- table(data$age, data$bottles_avgweek)
age.bottreuse <- table(data$age, data$bottles_reuses)
age.bottdisp <- table(data$age, data$bottles_disposal)
age.tubpurchase <- table(data$age, data$tubs_avgweek)
age.tubreuse <- table(data$age, data$tubs_reuses)
age.tubdisp <- table(data$age, data$tubs_disposal)
age.filmpur <- table(data$age, data$film_avgweek)
age.filmreuse <- table(data$age, data$film_reuses)
age.filmdisp <- table(data$age, data$film_disposal)
age.bagpurchase <-table(data$age, data$bags_avgweek)
age.bagreuse <- table(data$age, data$bags_reuses)
age.bagdisp <- table(data$age, data$bags_disposal)
```

```
addmargins(age.choice)
```

```
##
##           Always As often as they can If cheaper or preferred
## 30 and under      13              47              36
## 31-50              23              94              47
## 50+                10              67              33
```

```
##      Sum          46          208          116
##
##      Rarely or never Sum
## 30 and under          7 103
## 31-50                12 176
## 50+                  11 121
## Sum                  30 400
```

```
addmargins(age.barrier)
```

```
##
##      Council collection Unclear information Difficult transport
## 30 and under          16          27          7
## 31-50                53          17          14
## 50+                  46          18          10
## Sum                  115          62          31
##
##      No local facilities No support Ends up in landfills Forgetting
## 30 and under          7          4          9          13
## 31-50                22          12          18          9
## 50+                  6          2          6          3
## Sum                  35          18          33          25
##
##      Recycling a hassle Household disagrees Recycling not important
## 30 and under          4          3          1
## 31-50                4          2          3
## 50+                  2          0          1
## Sum                  10          5          5
##
##      Other Already doing everything Sum
## 30 and under          1          11 103
## 31-50                2          20 176
## 50+                  1          26 121
## Sum                  4          57 400
```

```
addmargins(age.barrier2)
```

```
##
##      Limited alternatives No SUP-free alternatives
## 30 and under          18          24
## 31-50                35          31
## 50+                  37          30
## Sum                  90          85
##
##      Alternatives expensive Limited functioning Forgetting reusables
## 30 and under          22          18          9
## 31-50                51          13          23
## 50+                  12          8          8
## Sum                  85          39          40
##
##      Reducing not important Other No barriers Sum
## 30 and under          6          1          5 103
## 31-50                5          2          16 176
```

##	50+	2	5	19	121
##	Sum	13	8	40	400

```
addmargins(age.mainconsid)
```

```
##
##          Value for money Price Quality Deals/discounts
## 30 and under          32    32    14          6
## 31-50                46    51    37          15
## 50+                  41    14    37          5
## Sum                 119    97    88          26
##
##          Use-by-dates/longevity Convenience Ease of recycling packaging
## 30 and under          4          4          4
## 31-50                4          1          10
## 50+                  6          5          8
## Sum                 14          10          22
##
##          Sustainability Brand Ethics Other Sum
## 30 and under          3    1    3    0 103
## 31-50                9    3    0    0 176
## 50+                  1    0    2    2 121
## Sum                 13    4    5    2 400
```

```
addmargins(age.litter)
```

```
##
##          Strongly agree Agree Neither agree nor disagree Disagree
## 30 and under          45    40          14    2
## 31-50                66    83          21    5
## 50+                  62    39          18    1
## Sum                 173   162          53    8
##
##          Strongly disagree Sum
## 30 and under          2 103
## 31-50                1 176
## 50+                  1 121
## Sum                 4 400
```

```
addmargins(age.attitude)
```

```
##
##          1 (Not concerned) 2 3 4 5 6 7 (Very concerned Sum
## 30 and under          13 7 15 21 28 11          8 103
## 31-50                7 9 19 36 51 25          29 176
## 50+                  7 4 7 16 35 20          32 121
## Sum                 27 20 41 73 114 56          69 400
```

```
addmargins(age.ocean)
```

```
##
```

```
##           Always Most of the time Sometimes Rarely Never Sum
## 30 and under      9           38           48           6      2 103
## 31-50             7           40           91          33      5 176
## 50+              3           26           61          21     10 121
## Sum             19          104          200          60     17 400
```

```
addmargins(age.actions)
```

```
##
##           Yes, definitely Yes, probably No, probably not
## 30 and under      33           52           9
## 31-50             67           84           19
## 50+              42           55           15
## Sum             142          191           43
##
##           No, definitely not I don't know Sum
## 30 and under      5           4 103
## 31-50             2           4 176
## 50+              4           5 121
## Sum             11          13 400
```

```
addmargins(age.attplast)
```

```
##
##           Will go out of their way to avoid
## 30 and under      26
## 31-50             47
## 50+              29
## Sum             102
##
##           If option is readily available, will avoid
## 30 and under      58
## 31-50             99
## 50+              61
## Sum             218
##
##           Will avoid only without extra costs Not a priority Sum
## 30 and under      15           4 103
## 31-50             22           8 176
## 50+              21          10 121
## Sum             58          22 400
```

```
addmargins(age.zerow)
```

```
##
##           Yes, shops regularly Yes, shops occasionally
## 30 and under      4           7
## 31-50            10          20
## 50+              0           3
## Sum             14          30
##
##           Yes, visited at least once Yes, never visited
```

```
##      30 and under          4          29
##      31-50                16          36
##      50+                  4          23
##      Sum                  24          88
##
##      No, but would like to shop there No, not likely to shop there
##      30 and under          51          8
##      31-50                70          24
##      50+                  54          37
##      Sum                  175         69
##
##      Sum
##      30 and under 103
##      31-50      176
##      50+        121
##      Sum        400
```

```
## SUPs
addmargins(age.bottpurchase)
```

```
##
##      None 1-2 3-5 6-10 11-15 16+ I don't know Sum
##      30 and under    2  31  35   20    5   6         4 103
##      31-50           3  48  66   38    8   8         5 176
##      50+             7  58  33   16    6   0         1 121
##      Sum             12 137 134   74   19  14        10 400
```

```
addmargins(age.bottreuse)
```

```
##
##      Never Once 2-4 times 5-10 times More often Sum
##      30 and under    11   16      39      16      21 103
##      31-50           33   33      56      21      33 176
##      50+             27   17      34      20      23 121
##      Sum             71   66     129     57      77 400
```

```
addmargins(age.bottdisp)
```

```
##
##      General waste bin Recycling bin Recycling centre
##      30 and under          8          78          6
##      31-50                14         144          2
##      50+                  5         106          2
##      Sum                  27         328         10
##
##      Specialist waste collection Landfill Deposit return scheme
##      30 and under          1          1          1
##      31-50                5          4          3
##      50+                  1          0          0
##      Sum                  7          5          4
##
##      Indefinite storage Other I don't know Sum
```

##	30 and under	7	0	1	103
##	31-50	4	0	0	176
##	50+	5	2	0	121
##	Sum	16	2	1	400

```
addmargins(age.tubpurchase)
```

##		None	1-2	3-5	6-10	11-15	16+	I don't know	Sum
##	30 and under	4	24	39	20	9	5	2	103
##	31-50	4	38	64	45	13	6	6	176
##	50+	4	46	40	20	7	2	2	121
##	Sum	12	108	143	85	29	13	10	400

```
addmargins(age.tubreuse)
```

##		Never	Once	2-4 times	5-10 times	More often	Sum
##	30 and under	11	9	20	18	45	103
##	31-50	24	20	50	30	52	176
##	50+	26	12	27	10	46	121
##	Sum	61	41	97	58	143	400

```
addmargins(age.tubdisp)
```

##		General waste bin	Recycling bin	Recycling centre
##	30 and under	17	46	10
##	31-50	41	101	9
##	50+	28	64	10
##	Sum	86	211	29

##		Specialist waste collection	Landfill	Deposit return scheme
##	30 and under	8	1	1
##	31-50	4	2	3
##	50+	0	0	0
##	Sum	12	3	4

##		Indefinite storage	Other	I don't know	Sum
##	30 and under	15	1	4	103
##	31-50	12	3	1	176
##	50+	15	3	1	121
##	Sum	42	7	6	400

```
addmargins(age.filmpur)
```

##		None	1-2	3-5	6-10	11-15	16+	I don't know	Sum
##	30 and under	2	19	29	30	13	7	3	103
##	31-50	3	27	55	57	18	9	7	176
##	50+	7	38	38	26	8	2	2	121
##	Sum	12	84	122	113	39	18	12	400

```
addmargins(age.filmreuse)
```

```
##
##               Never Once 2-4 times 5-10 times More often Sum
## 30 and under    51  21      21      6      4 103
## 31-50           95  40      28      4      9 176
## 50+             90  22       5      2      2 121
## Sum            236  83      54     12     15 400
```

```
addmargins(age.filmdisp)
```

```
##
##               General waste bin Recycling bin Recycling centre
## 30 and under                60      28      8
## 31-50                    107      46      9
## 50+                      98      18      0
## Sum                    265      92     17
##
##               Specialist waste collection Landfill Deposit return scheme
## 30 and under                2      1      0
## 31-50                    4      2      2
## 50+                      0      0      0
## Sum                    6      3      2
##
##               Indefinite storage Other I don't know Sum
## 30 and under                1      1      2 103
## 31-50                    2      3      1 176
## 50+                      0      2      3 121
## Sum                    3      6      6 400
```

```
addmargins(age.bagpurchase)
```

```
##
##               None 1-2 3-5 6-10 11-15 16+ I don't know Sum
## 30 and under    41  26  21   7   4   1      3 103
## 31-50           88  36  21  12  10   7      2 176
## 50+            103  15   1   0   0   0      2 121
## Sum            232  77  43  19  14   8      7 400
```

```
addmargins(age.bagreuse)
```

```
##
##               Never Once 2-4 times 5-10 times More often Sum
## 30 and under     5   9      28      16      45 103
## 31-50            12  28      43      32      61 176
## 50+             14   7      22      22      56 121
## Sum             31  44      93      70     162 400
```

```
addmargins(age.bagdisp)
```

```
##
##           General waste bin Recycling bin Recycling centre
## 30 and under           37           21           11
## 31-50                   61           49           12
## 50+                     45           22           6
## Sum                    143          92          29
##
##           Specialist waste collection Landfill Deposit return scheme
## 30 and under           3           0           2
## 31-50                   5           2           8
## 50+                     0           0           1
## Sum                     8           2          11
##
##           Indefinite storage Other I don't know Sum
## 30 and under           23           2           4 103
## 31-50                   26          10           3 176
## 50+                     34          11           2 121
## Sum                     83          23           9 400
```

‘Education’ factor:

```
edu.choice <- table(data$education_level, data$choice_plastic)
edu.barrier <- table(data$education_level, data$barrier_recycling)
edu.barrier2 <- table(data$education_level, data$barrier_reducing)
edu.mainconsid <- table(data$education_level, data$main_con_plastic)
edu.litter <- table(data$education_level, data$littering)
edu.attitude <- table(data$education_level, data$attitude_disposal)
edu.ocean <- table(data$education_level, data$plasticwaste_ocean)
edu.actions <- table(data$education_level, data$individual_actions)
edu.attplast <- table(data$education_level, data$attitude_plastic)
edu.zerow <- table(data$education_level, data$zerowaste)

# SUPs
edu.bottpurchase <- table(data$education_level, data$bottles_avgweek)
edu.bottreuse <- table(data$education_level, data$bottles_reuses)
edu.bottdisp <- table(data$education_level, data$bottles_disposal)
edu.tubspurchase <- table(data$education_level, data$tubs_avgweek)
edu.tubsreuse <- table(data$education_level, data$tubs_reuses)
edu.tubdisp <- table(data$education_level, data$tubs_disposal)
edu.filmpurchase <- table(data$education_level, data$film_avgweek)
edu.filmreuse <- table(data$education_level, data$film_reuses)
edu.filmdisp <- table(data$education_level, data$film_disposal)
edu.bagpurchase <- table(data$education_level, data$bags_avgweek)
edu.bagreuse <- table(data$education_level, data$bags_reuses)
edu.bagdisp <- table(data$education_level, data$bags_disposal)
```

```
addmargins(edu.choice)
```

```
##
```

```
##           Always As often as they can If cheaper or preferred
## Primary           1           1           0
## Secondary          7           50          31
## High school        9           67          43
## Undergraduate      23          71          32
## Postgraduate        6           19          10
## Sum                46          208         116
##
##           Rarely or never Sum
## Primary              0   2
## Secondary             9  97
## High school          11 130
## Undergraduate         9 135
## Postgraduate          1  36
## Sum                  30 400
```

```
addmargins(edu.barrier)
```

```
##
##           Council collection Unclear information Difficult transport
## Primary              1           0           0
## Secondary            22          20           7
## High school          37          23           8
## Undergraduate        44          14          14
## Postgraduate          11           5           2
## Sum                  115          62          31
##
##           No local facilities No support Ends up in landfills Forgetting
## Primary              1           0           0           0
## Secondary             9           1           8           5
## High school           8           5           9           8
## Undergraduate         15           8          13           8
## Postgraduate           2           4           3           4
## Sum                   35          18          33          25
##
##           Recycling a hassle Household disagrees Recycling not important
## Primary              0           0           0
## Secondary             3           0           1
## High school           3           2           1
## Undergraduate         3           2           1
## Postgraduate           1           1           2
## Sum                   10           5           5
##
##           Other Already doing everything Sum
## Primary              0           0   2
## Secondary             1          20  97
## High school           3          23 130
## Undergraduate         0          13 135
## Postgraduate           0           1  36
## Sum                   4          57 400
```

```
addmargins(edu.barrier2)
```

```

##
##      Limited alternatives No SUP-free alternatives
## Primary                2                0
## Secondary              22               13
## High school            35               29
## Undergraduate          23               31
## Postgraduate           8               12
## Sum                    90               85
##
##      Alternatives expensive Limited functioning Forgetting reusables
## Primary                0                0                0
## Secondary              22               7               10
## High school            23              12               16
## Undergraduate          34              16               13
## Postgraduate           6                4                1
## Sum                    85              39               40
##
##      Reducing not important Other No barriers Sum
## Primary                0                0                0    2
## Secondary              5                3               15   97
## High school            2                1               12  130
## Undergraduate          3                4               11  135
## Postgraduate           3                0                2   36
## Sum                    13                8               40  400

```

```
addmargins(edu.mainconsid)
```

```

##
##      Value for money Price Quality Deals/discounts
## Primary                0                0                0
## Secondary              27               27               18    7
## High school            40               29               30    7
## Undergraduate          41               34               28   10
## Postgraduate           11                7               12    2
## Sum                    119              97               88   26
##
##      Use-by-dates/longevity Convenience Ease of recycling packaging
## Primary                1                0                0
## Secondary              2                3                6
## High school            7                3               10
## Undergraduate          3                4                5
## Postgraduate           1                0                1
## Sum                    14               10               22
##
##      Sustainability Brand Ethics Other Sum
## Primary                1                0                0    0    2
## Secondary              2                2                1    2   97
## High school            1                1                2    0  130
## Undergraduate          8                1                1    0  135
## Postgraduate           1                0                1    0   36
## Sum                    13                4                5    2  400

```

```
addmargins(edu.litter)
```

```
##
##           Strongly agree Agree Neither agree nor disagree Disagree
## Primary           0      2                               0      0
## Secondary         42     37                               17      1
## High school       57     54                               16      2
## Undergraduate     56     55                               16      5
## Postgraduate      18     14                               4      0
## Sum              173    162                               53      8
##
##           Strongly disagree Sum
## Primary           0      2
## Secondary         0     97
## High school       1    130
## Undergraduate     3    135
## Postgraduate      0     36
## Sum              4    400
```

```
addmargins(edu.attitude)
```

```
##
##           1 (Not concerned) 2 3 4 5 6 7 (Very concerned Sum
## Primary           0 0 1 0 0 1           0 2
## Secondary         9 8 7 15 25 12           21 97
## High school       7 1 19 28 40 16           19 130
## Undergraduate     8 10 14 25 36 18           24 135
## Postgraduate      3 1 0 5 13 9            5 36
## Sum              27 20 41 73 114 56           69 400
```

```
addmargins(edu.ocean)
```

```
##
##           Always Most of the time Sometimes Rarely Never Sum
## Primary           0           1           1           0           0 2
## Secondary         5           20          50          16           6 97
## High school       8           31          72          17           2 130
## Undergraduate     5           41          62          21           6 135
## Postgraduate      1           11          15           6           3 36
## Sum              19          104          200          60          17 400
```

```
addmargins(edu.actions)
```

```
##
##           Yes, definitely Yes, probably No, probably not
## Primary           2           0           0
## Secondary         30          46          15
## High school       45          62          15
## Undergraduate     55          62          11
## Postgraduate      10          21           2
## Sum              142          191          43
```

```
##
##          No, definitely not I don't know Sum
## Primary          0          0  2
## Secondary        2          4  97
## High school      5          3 130
## Undergraduate    2          5 135
## Postgraduate     2          1  36
## Sum              11         13 400
```

```
addmargins(edu.attplast)
```

```
##
##          Will go out of their way to avoid
## Primary          0
## Secondary        17
## High school      35
## Undergraduate    36
## Postgraduate     14
## Sum              102
##
##          If option is readily available, will avoid
## Primary          2
## Secondary        54
## High school      71
## Undergraduate    76
## Postgraduate     15
## Sum              218
##
##          Will avoid only without extra costs Not a priority Sum
## Primary          0          0  2
## Secondary        19          7  97
## High school      16          8 130
## Undergraduate    17          6 135
## Postgraduate     6          1  36
## Sum              58         22 400
```

```
addmargins(edu.zerow)
```

```
##
##          Yes, shops regularly Yes, shops occasionally
## Primary          1          0
## Secondary        3          4
## High school      3          7
## Undergraduate    4         14
## Postgraduate     3          5
## Sum              14         30
##
##          Yes, visited at least once Yes, never visited
## Primary          0          0
## Secondary        3         17
## High school      8         29
## Undergraduate    9         38
## Postgraduate     4          4
```

```
##      Sum                24                88
##
##      No, but would like to shop there No, not likely to shop there
##      Primary                1                0
##      Secondary              48               22
##      High school            60               23
##      Undergraduate          51               19
##      Postgraduate           15                5
##      Sum                    175              69
##
##      Sum
##      Primary                2
##      Secondary              97
##      High school            130
##      Undergraduate          135
##      Postgraduate           36
##      Sum                    400
```

```
## SUPs
addmargins(edu.bottpurchase)
```

```
##
##      None 1-2 3-5 6-10 11-15 16+ I don't know Sum
##      Primary      0  0  1  1  0  0      0  2
##      Secondary     2 36 29 21  6  1      2 97
##      High school   5 44 44 22  6  3      6 130
##      Undergraduate 3 46 49 23  6  6      2 135
##      Postgraduate  2 11 11  7  1  4      0 36
##      Sum           12 137 134 74 19 14     10 400
```

```
addmargins(edu.bottreuse)
```

```
##
##      Never Once 2-4 times 5-10 times More often Sum
##      Primary      1  0      1      0      0  2
##      Secondary     23 18      23      20     13 97
##      High school   23 22      39      18     28 130
##      Undergraduate 19 21      53      15     27 135
##      Postgraduate  5  5      13      4      9  36
##      Sum           71 66     129     57     77 400
```

```
addmargins(edu.bottdisp)
```

```
##
##      General waste bin Recycling bin Recycling centre
##      Primary                0                1                0
##      Secondary              7                86                1
##      High school            8               105                3
##      Undergraduate          9               108                5
##      Postgraduate           3                28                1
##      Sum                    27               328               10
##
```

```
## Specialist waste collection Landfill Deposit return scheme
## Primary 0 0 1
## Secondary 1 1 0
## High school 2 0 2
## Undergraduate 2 4 1
## Postgraduate 2 0 0
## Sum 7 5 4
##
## Indefinite storage Other I don't know Sum
## Primary 0 0 0 2
## Secondary 0 0 1 97
## High school 9 1 0 130
## Undergraduate 5 1 0 135
## Postgraduate 2 0 0 36
## Sum 16 2 1 400
```

```
addmargins(edu.tubspurchase)
```

```
##
## None 1-2 3-5 6-10 11-15 16+ I don't know Sum
## Primary 0 0 2 0 0 0 0 2
## Secondary 5 28 41 12 8 1 2 97
## High school 4 35 43 32 10 2 4 130
## Undergraduate 3 38 43 30 9 8 4 135
## Postgraduate 0 7 14 11 2 2 0 36
## Sum 12 108 143 85 29 13 10 400
```

```
addmargins(edu.tubsreuse)
```

```
##
## Never Once 2-4 times 5-10 times More often Sum
## Primary 0 0 1 0 1 2
## Secondary 18 14 24 14 27 97
## High school 12 13 32 17 56 130
## Undergraduate 28 9 33 18 47 135
## Postgraduate 3 5 7 9 12 36
## Sum 61 41 97 58 143 400
```

```
addmargins(edu.tubdisp)
```

```
##
## General waste bin Recycling bin Recycling centre
## Primary 0 2 0
## Secondary 24 55 3
## High school 22 68 9
## Undergraduate 33 68 12
## Postgraduate 7 18 5
## Sum 86 211 29
##
## Specialist waste collection Landfill Deposit return scheme
## Primary 0 0 0
## Secondary 3 1 0
```

##	High school	5	0	2
##	Undergraduate	3	1	2
##	Postgraduate	1	1	0
##	Sum	12	3	4
##				
##		Indefinite storage	Other	I don't know Sum
##	Primary	0	0	0 2
##	Secondary	9	2	0 97
##	High school	19	0	5 130
##	Undergraduate	10	5	1 135
##	Postgraduate	4	0	0 36
##	Sum	42	7	6 400

```
addmargins(edu.filmpurchase)
```

##		None	1-2	3-5	6-10	11-15	16+	I don't know	Sum
##	Primary	0	1	0	1	0	0	0	2
##	Secondary	3	20	29	31	10	2	2	97
##	High school	5	29	36	38	13	5	4	130
##	Undergraduate	4	29	41	37	11	8	5	135
##	Postgraduate	0	5	16	6	5	3	1	36
##	Sum	12	84	122	113	39	18	12	400

```
addmargins(edu.filmreuse)
```

##		Never	Once	2-4 times	5-10 times	More often	Sum
##	Primary	0	0	1	0	1	2
##	Secondary	62	20	8	6	1	97
##	High school	84	27	13	2	4	130
##	Undergraduate	70	30	22	4	9	135
##	Postgraduate	20	6	10	0	0	36
##	Sum	236	83	54	12	15	400

```
addmargins(edu.filmdisp)
```

##		General waste bin	Recycling bin	Recycling centre
##	Primary	0	1	0
##	Secondary	71	18	4
##	High school	89	34	1
##	Undergraduate	85	28	11
##	Postgraduate	20	11	1
##	Sum	265	92	17
##				
##		Specialist waste collection	Landfill	Deposit return scheme
##	Primary	0	0	0
##	Secondary	0	0	0
##	High school	2	0	1
##	Undergraduate	3	1	1
##	Postgraduate	1	2	0

```
##      Sum                6          3          2
##
##      Indefinite storage Other I don't know Sum
## Primary                0      1          0  2
## Secondary              0      1          3  97
## High school            1      0          2 130
## Undergraduate          2      3          1 135
## Postgraduate           0      1          0  36
## Sum                    3      6          6 400
```

```
addmargins(edu.bagpurchase)
```

```
##
##      None 1-2 3-5 6-10 11-15 16+ I don't know Sum
## Primary      1  0  1  0  0  0          0  2
## Secondary    53 18 15  3  5  1          2  97
## High school  78 22 15  6  4  2          3 130
## Undergraduate 79 32  7  7  4  4          2 135
## Postgraduate 21  5  5  3  1  1          0  36
## Sum          232 77 43 19 14  8          7 400
```

```
addmargins(edu.bagreuse)
```

```
##
##      Never Once 2-4 times 5-10 times More often Sum
## Primary      0  0          1          0          1  2
## Secondary    11 12          24          18          32  97
## High school  10 13          29          21          57 130
## Undergraduate  8 16          31          26          54 135
## Postgraduate  2  3          8           5          18  36
## Sum          31 44          93          70          162 400
```

```
addmargins(edu.bagdisp)
```

```
##
##      General waste bin Recycling bin Recycling centre
## Primary                1          1          0
## Secondary              43          21          5
## High school            48          31          6
## Undergraduate          37          33          14
## Postgraduate           14          6           4
## Sum                    143          92          29
##
##      Specialist waste collection Landfill Deposit return scheme
## Primary                0          0          0
## Secondary              2          0          1
## High school            3          0          3
## Undergraduate          3          1          6
## Postgraduate           0          1          1
## Sum                    8          2          11
##
##      Indefinite storage Other I don't know Sum
```

```
## Primary          0      0          0  2
## Secondary        21      1          3 97
## High school      31      4          4 130
## Undergraduate    23     16          2 135
## Postgraduate      8      2          0  36
## Sum              83     23          9 400
```

‘Gender’ factor:

```
gen.choice <- table(data$gender, data$choice_plastic)
gen.barrier <- table(data$gender, data$barrier_recycling)
gen.barrier2 <- table(data$gender, data$barrier_reducing)
gen.mainconsid <- table(data$gender, data$main_con_plastic)
gen.litter <- table(data$gender, data$littering)
gen.attitude <- table(data$gender, data$attitude_disposal)
gen.ocean <- table(data$gender, data$plasticwaste_ocean)
gen.actions <- table(data$gender, data$individual_actions)
gen.attplast <- table(data$gender, data$attitude_plastic)
gen.zerow <- table(data$gender, data$zerowaste)

## SUPs
gen.bottpurchase <- table(data$gender, data$bottles_avgweek)
gen.bottreuse <- table(data$gender, data$bottles_reuses)
gen.bottdisp <- table(data$gender, data$bottles_disposal)
gen.tubspurchase <- table(data$gender, data$tubs_avgweek)
gen.tubreuse <- table(data$gender, data$tubs_reuses)
gen.tubdisp <- table(data$gender, data$tubs_disposal)
gen.filmpurchase <- table(data$gender, data$film_avgweek)
gen.filmreuse <- table(data$gender, data$film_reuses)
gen.filmdisp <- table(data$gender, data$film_disposal)
gen.bagpurchase <- table(data$gender, data$bags_avgweek)
gen.bagreuse <- table(data$gender, data$bags_reuses)
gen.bagdisp <- table(data$gender, data$bags_disposal)
```

```
addmargins(gen.choice)
```

```
##
## Always As often as they can If cheaper or preferred Rarely or never
## Male 21 75 46 16
## Female 25 132 69 13
## Other 0 1 1 1
## Sum 46 208 116 30
##
## Sum
## Male 158
## Female 239
## Other 3
## Sum 400
```

```
addmargins(gen.barrier)
```

```
##
##      Council collection Unclear information Difficult transport
## Male                47                18                10
## Female              68                44                21
## Other                0                 0                 0
## Sum                 115                62                31
##
##      No local facilities No support Ends up in landfills Forgetting
## Male                10                10                14                15
## Female              25                 8                18                 9
## Other                0                 0                 1                 1
## Sum                 35                18                33                25
##
##      Recycling a hassle Household disagrees Recycling not important Other
## Male                5                 2                 2                 1
## Female              5                 3                 3                 3
## Other                0                 0                 0                 0
## Sum                 10                 5                 5                 4
##
##      Already doing everything Sum
## Male                24 158
## Female              32 239
## Other                1   3
## Sum                 57 400
```

```
addmargins(gen.barrier2)
```

```
##
##      Limited alternatives No SUP-free alternatives Alternatives expensive
## Male                39                40                27
## Female              50                45                57
## Other                1                 0                 1
## Sum                 90                85                85
##
##      Limited functioning Forgetting reusables Reducing not important Other
## Male                18                 8                 5                 4
## Female              21                32                 8                 4
## Other                0                 0                 0                 0
## Sum                 39                40                13                 8
##
##      No barriers Sum
## Male                17 158
## Female              22 239
## Other                1   3
## Sum                 40 400
```

```
addmargins(gen.mainconsid)
```

```
##
```

```
##           Value for money Price Quality Deals/discounts Use-by-dates/longevity
## Male           47      33      43              7              3
## Female          70      63      45             19             11
## Other           2       1       0              0              0
## Sum            119      97      88             26             14
##
##           Convenience Ease of recycling packaging Sustainability Brand Ethics
## Male           4              11              5       2       1
## Female          6              11              8       2       4
## Other           0              0              0       0       0
## Sum            10             22             13       4       5
##
##           Other Sum
## Male           2 158
## Female          0 239
## Other           0   3
## Sum            2 400
```

```
addmargins(gen.litter)
```

```
##
##           Strongly agree Agree Neither agree nor disagree Disagree
## Male           57      74              23       2
## Female          114     88              29       6
## Other           2       0              1       0
## Sum            173     162             53       8
##
##           Strongly disagree Sum
## Male           2 158
## Female          2 239
## Other           0   3
## Sum            4 400
```

```
addmargins(gen.attitude)
```

```
##
##           1 (Not concerned) 2 3 4 5 6 7 (Very concerned Sum
## Male           11 9 15 23 43 26              31 158
## Female          15 11 26 50 70 29              38 239
## Other           1 0 0 0 1 1              0   3
## Sum            27 20 41 73 114 56              69 400
```

```
addmargins(gen.ocean)
```

```
##
##           Always Most of the time Sometimes Rarely Never Sum
## Male           6              41              75      29      7 158
## Female          13              61             125     31      9 239
## Other           0              2              0       0      1   3
## Sum            19             104             200     60     17 400
```

```
addmargins(gen.actions)
```

```
##
##           Yes, definitely Yes, probably No, probably not No, definitely not
## Male           58           71           19           5
## Female         83          119           24           5
## Other           1            1            0           1
## Sum           142          191           43          11
##
##           I don't know Sum
## Male           5 158
## Female         8 239
## Other           0  3
## Sum           13 400
```

```
addmargins(gen.attplast)
```

```
##
##           Will go out of their way to avoid
## Male                               37
## Female                             64
## Other                              1
## Sum                               102
##
##           If option is readily available, will avoid
## Male                               89
## Female                             128
## Other                              1
## Sum                               218
##
##           Will avoid only without extra costs Not a priority Sum
## Male                               22           10 158
## Female                             36           11 239
## Other                              0            1  3
## Sum                               58           22 400
```

```
addmargins(gen.zerow)
```

```
##
##           Yes, shops regularly Yes, shops occasionally
## Male           7           15
## Female         7           14
## Other           0            1
## Sum           14           30
##
##           Yes, visited at least once Yes, never visited
## Male           13           30
## Female         11           57
## Other           0            1
## Sum           24           88
##
```

```
##           No, but would like to shop there No, not likely to shop there Sum
##   Male                               55                               38 158
##   Female                             119                               31 239
##   Other                               1                                0  3
##   Sum                               175                               69 400
```

```
## SUPs
addmargins(gen.bottpurchase)
```

```
##
##           None 1-2 3-5 6-10 11-15 16+ I don't know Sum
##   Male           7 47 49 33 12 8 2 158
##   Female          5 90 85 39 7 6 7 239
##   Other           0 0 0 2 0 0 1 3
##   Sum            12 137 134 74 19 14 10 400
```

```
addmargins(gen.bottreuse)
```

```
##
##           Never Once 2-4 times 5-10 times More often Sum
##   Male           34 31 48 22 23 158
##   Female          36 34 81 35 53 239
##   Other           1 1 0 0 1 3
##   Sum            71 66 129 57 77 400
```

```
addmargins(gen.bottdisp)
```

```
##
##           General waste bin Recycling bin Recycling centre
##   Male                8 134 5
##   Female              19 193 5
##   Other                0 1 0
##   Sum                 27 328 10
##
##           Specialist waste collection Landfill Deposit return scheme
##   Male                3 3 2
##   Female              4 1 2
##   Other               0 1 0
##   Sum                 7 5 4
##
##           Indefinite storage Other I don't know Sum
##   Male                3 0 0 158
##   Female              13 2 0 239
##   Other               0 0 1 3
##   Sum                 16 2 1 400
```

```
addmargins(gen.tubspurchase)
```

```
##
##           None 1-2 3-5 6-10 11-15 16+ I don't know Sum
##   Male           8 44 54 33 8 8 3 158
```

```
## Female      4  63  88  52  21  5          6 239
## Other       0   1   1   0   0  0          1   3
## Sum        12 108 143  85  29 13         10 400
```

```
addmargins(gen.tubreuse)
```

```
##
##           Never Once 2-4 times 5-10 times More often Sum
## Male       32  21      38      17      50 158
## Female     29  20      59      39      92 239
## Other       0   0       0       2       1   3
## Sum        61  41     97     58     143 400
```

```
addmargins(gen.tubdisp)
```

```
##
##           General waste bin Recycling bin Recycling centre
## Male              32              94              14
## Female            54              117              15
## Other              0              0              0
## Sum               86              211              29
##
##           Specialist waste collection Landfill Deposit return scheme
## Male              4              1              2
## Female            7              2              2
## Other              1              0              0
## Sum              12              3              4
##
##           Indefinite storage Other I don't know Sum
## Male              8      2              1 158
## Female            33      4              5 239
## Other              1      1              0   3
## Sum              42      7              6 400
```

```
addmargins(gen.filmpurchase)
```

```
##
##           None 1-2 3-5 6-10 11-15 16+ I don't know Sum
## Male       5  29  46  52  12  9          5 158
## Female     7  55  76  60  26  9          6 239
## Other      0   0   0   1   1  0          1   3
## Sum       12  84 122 113  39 18         12 400
```

```
addmargins(gen.filmreuse)
```

```
##
##           Never Once 2-4 times 5-10 times More often Sum
## Male       92  28      26      4       8 158
## Female    143  55      27      8       6 239
## Other       1   0       1       0       1   3
## Sum       236  83     54     12     15 400
```

```
addmargins(gen.filmdisp)
```

```
##
##      General waste bin Recycling bin Recycling centre
## Male      97      44      7
## Female    167      48     10
## Other      1       0      0
## Sum      265     92     17
##
##      Specialist waste collection Landfill Deposit return scheme
## Male              4       2      1
## Female            2       1      1
## Other             0       0      0
## Sum              6       3      2
##
##      Indefinite storage Other I don't know Sum
## Male              0       2      1 158
## Female            3       3      4 239
## Other             0       1      1   3
## Sum              3       6      6 400
```

```
addmargins(gen.bagpurchase)
```

```
##
##      None 1-2 3-5 6-10 11-15 16+ I don't know Sum
## Male     94  24  17   10    7   4      2 158
## Female   137  52  26    9    7   4      4 239
## Other     1   1   0    0    0   0      1   3
## Sum     232  77  43   19   14   8      7 400
```

```
addmargins(gen.bagreuse)
```

```
##
##      Never Once 2-4 times 5-10 times More often Sum
## Male     14  24      36      32      52 158
## Female    17  20      56      38     108 239
## Other      0   0       1       0       2   3
## Sum      31  44      93      70     162 400
```

```
addmargins(gen.bagdisp)
```

```
##
##      General waste bin Recycling bin Recycling centre
## Male      63      45      9
## Female     80      47     20
## Other       0       0      0
## Sum      143     92     29
##
##      Specialist waste collection Landfill Deposit return scheme
## Male              2       1      4
## Female            5       1      7
```

```
##      Other          1          0          0
##      Sum            8          2         11
##
##      Indefinite storage Other I don't know Sum
##      Male            23          9          2 158
##      Female          59         14          6 239
##      Other            1          0          1   3
##      Sum            83         23          9 400
```

‘Income’ factor:

```
inc.choice <- table(data$annual_income, data$choice_plastic)
inc.barrier <- table(data$annual_income, data$barrier_recycling)
inc.barrier2 <- table(data$annual_income, data$barrier_reducing)
inc.mainconsid <- table(data$annual_income, data$main_con_plastic)
inc.litter <- table(data$annual_income, data$littering)
inc.attitude <- table(data$annual_income, data$attitude_disposal)
inc.ocean <- table(data$annual_income, data$plasticwaste_ocean)
inc.actions <- table(data$annual_income, data$individual_actions)
inc.attplast <- table(data$annual_income, data$attitude_plastic)
inc.zerow <- table(data$annual_income, data$zerowaste)

## SUPs
inc.bottpurchase <- table(data$annual_income, data$bottles_avgweek)
inc.bottreuse <- table(data$annual_income, data$bottles_reuses)
inc.bottdisp <- table(data$annual_income, data$bottles_disposal)
inc.tubspurchase <- table(data$annual_income, data$tubs_avgweek)
inc.tubreuse <- table(data$annual_income, data$tubs_reuses)
inc.tubdisp <- table(data$annual_income, data$tubs_disposal)
inc.filmpurchase <- table(data$annual_income, data$film_avgweek)
inc.filmreuse <- table(data$annual_income, data$film_reuses)
inc.filmdisp <- table(data$annual_income, data$film_disposal)
inc.bagpurchase <- table(data$annual_income, data$bags_avgweek)
inc.bagreuse <- table(data$annual_income, data$bags_reuses)
inc.bagdisp <- table(data$annual_income, data$bags_disposal)
```

```
addmargins(inc.choice)
```

```
##
##      Always As often as they can If cheaper or preferred
##      Less than £12,000      4      17      15
##      £12,000-14,999        1      15      10
##      £15,000-19,999       15      28      14
##      £20,000-24,999        4      25      15
##      £25,000-34,999        4      31      14
##      £35,000-49,999       12      40      19
##      £50,000-74,999        2      27      12
##      £100,000-149,000       2      11       3
##      £150,000 or more       1       2       1
##      Prefer not to say      1      12      13
```

##	Sum	46	208	116
##				
##		Rarely or never	Sum	
##	Less than £12,000	6	42	
##	£12,000-14,999	2	28	
##	£15,000-19,999	6	63	
##	£20,000-24,999	2	46	
##	£25,000-34,999	3	52	
##	£35,000-49,999	5	76	
##	£50,000-74,999	4	45	
##	£100,000-149,000	0	16	
##	£150,000 or more	0	4	
##	Prefer not to say	2	28	
##	Sum	30	400	

```
addmargins(inc.barrier)
```

##				
##		Council collection	Unclear information	Difficult transport
##	Less than £12,000	9	7	6
##	£12,000-14,999	5	10	1
##	£15,000-19,999	17	9	6
##	£20,000-24,999	13	4	3
##	£25,000-34,999	12	3	4
##	£35,000-49,999	28	13	7
##	£50,000-74,999	15	7	3
##	£100,000-149,000	6	3	0
##	£150,000 or more	1	0	0
##	Prefer not to say	9	6	1
##	Sum	115	62	31
##				
##		No local facilities	No support	Ends up in landfills
##	Less than £12,000	3	0	3
##	£12,000-14,999	3	0	2
##	£15,000-19,999	4	5	4
##	£20,000-24,999	6	0	2
##	£25,000-34,999	8	5	6
##	£35,000-49,999	7	0	6
##	£50,000-74,999	1	3	6
##	£100,000-149,000	1	1	3
##	£150,000 or more	0	2	0
##	Prefer not to say	2	2	1
##	Sum	35	18	33
##				
##		Forgetting Recycling a hassle	Household disagrees	
##	Less than £12,000	2	2	1
##	£12,000-14,999	2	1	0
##	£15,000-19,999	3	2	2
##	£20,000-24,999	4	1	1
##	£25,000-34,999	2	0	0
##	£35,000-49,999	6	2	0
##	£50,000-74,999	5	1	1
##	£100,000-149,000	0	0	0
##	£150,000 or more	0	0	0

##	Prefer not to say	1	1	0	
##	Sum	25	10	5	
##					
##		Recycling not important	Other	Already doing everything	Sum
##	Less than £12,000	0	0	9	42
##	£12,000-14,999	0	2	2	28
##	£15,000-19,999	1	1	9	63
##	£20,000-24,999	2	1	9	46
##	£25,000-34,999	0	0	12	52
##	£35,000-49,999	0	0	7	76
##	£50,000-74,999	0	0	3	45
##	£100,000-149,000	0	0	2	16
##	£150,000 or more	1	0	0	4
##	Prefer not to say	1	0	4	28
##	Sum	5	4	57	400

```
addmargins(inc.barrier2)
```

##				
##		Limited alternatives	No SUP-free alternatives	
##	Less than £12,000	7	8	
##	£12,000-14,999	6	4	
##	£15,000-19,999	10	16	
##	£20,000-24,999	8	6	
##	£25,000-34,999	13	8	
##	£35,000-49,999	21	19	
##	£50,000-74,999	11	11	
##	£100,000-149,000	2	4	
##	£150,000 or more	0	2	
##	Prefer not to say	12	7	
##	Sum	90	85	
##				
##		Alternatives expensive	Limited functioning	
##	Less than £12,000	9	4	
##	£12,000-14,999	9	5	
##	£15,000-19,999	14	6	
##	£20,000-24,999	11	6	
##	£25,000-34,999	7	3	
##	£35,000-49,999	17	7	
##	£50,000-74,999	6	5	
##	£100,000-149,000	6	2	
##	£150,000 or more	1	0	
##	Prefer not to say	5	1	
##	Sum	85	39	
##				
##		Forgetting reusables	Reducing not important	Other
##	Less than £12,000	9	0	0
##	£12,000-14,999	2	1	1
##	£15,000-19,999	4	3	3
##	£20,000-24,999	4	3	0
##	£25,000-34,999	9	1	1
##	£35,000-49,999	6	2	1
##	£50,000-74,999	5	2	1
##	£100,000-149,000	1	0	0

##	£150,000 or more	0	1	0
##	Prefer not to say	0	0	1
##	Sum	40	13	8
##				
##		No barriers	Sum	
##	Less than £12,000	5	42	
##	£12,000-14,999	0	28	
##	£15,000-19,999	7	63	
##	£20,000-24,999	8	46	
##	£25,000-34,999	10	52	
##	£35,000-49,999	3	76	
##	£50,000-74,999	4	45	
##	£100,000-149,000	1	16	
##	£150,000 or more	0	4	
##	Prefer not to say	2	28	
##	Sum	40	400	

```
addmargins(inc.mainconsid)
```

##					
##		Value for money	Price	Quality	Deals/discounts
##	Less than £12,000	12	12	11	4
##	£12,000-14,999	9	6	3	2
##	£15,000-19,999	18	11	16	5
##	£20,000-24,999	10	17	10	3
##	£25,000-34,999	18	15	9	1
##	£35,000-49,999	23	19	18	2
##	£50,000-74,999	16	4	10	8
##	£100,000-149,000	5	3	7	0
##	£150,000 or more	0	1	1	1
##	Prefer not to say	8	9	3	0
##	Sum	119	97	88	26
##					
##		Use-by-dates/longevity	Convenience		
##	Less than £12,000	1	1		
##	£12,000-14,999	1	2		
##	£15,000-19,999	1	2		
##	£20,000-24,999	2	0		
##	£25,000-34,999	1	0		
##	£35,000-49,999	2	2		
##	£50,000-74,999	2	1		
##	£100,000-149,000	1	0		
##	£150,000 or more	0	0		
##	Prefer not to say	3	2		
##	Sum	14	10		
##					
##		Ease of recycling packaging	Sustainability	Brand	Ethics
##	Less than £12,000	1	0	0	0
##	£12,000-14,999	2	1	1	1
##	£15,000-19,999	1	4	2	1
##	£20,000-24,999	2	2	0	0
##	£25,000-34,999	6	2	0	0
##	£35,000-49,999	6	2	1	1
##	£50,000-74,999	3	1	0	0

```
##      £100,000-149,000      0      0      0      0
##      £150,000 or more      0      0      0      1
##      Prefer not to say      1      1      0      1
##      Sum                    22     13      4      5
##
##                               Other Sum
##      Less than £12,000      0  42
##      £12,000-14,999        0  28
##      £15,000-19,999        2  63
##      £20,000-24,999        0  46
##      £25,000-34,999        0  52
##      £35,000-49,999        0  76
##      £50,000-74,999        0  45
##      £100,000-149,000      0  16
##      £150,000 or more      0   4
##      Prefer not to say      0  28
##      Sum                    2 400
```

```
addmargins(inc.litter)
```

```
##
##      Strongly agree Agree Neither agree nor disagree Disagree
##      Less than £12,000      18   14      4      2
##      £12,000-14,999        11   14      2      1
##      £15,000-19,999        26   27      8      2
##      £20,000-24,999        17   18     11      0
##      £25,000-34,999        26   16      9      1
##      £35,000-49,999        33   35      7      1
##      £50,000-74,999        20   19      5      1
##      £100,000-149,000       6    9      1      0
##      £150,000 or more       3    1      0      0
##      Prefer not to say      13    9      6      0
##      Sum                    173  162     53      8
##
##      Strongly disagree Sum
##      Less than £12,000      4  42
##      £12,000-14,999        0  28
##      £15,000-19,999        0  63
##      £20,000-24,999        0  46
##      £25,000-34,999        0  52
##      £35,000-49,999        0  76
##      £50,000-74,999        0  45
##      £100,000-149,000      0  16
##      £150,000 or more      0   4
##      Prefer not to say      0  28
##      Sum                    4 400
```

```
addmargins(inc.attitude)
```

```
##
##      1 (Not concerned)  2  3  4  5  6 7 (Very concerned Sum
##      Less than £12,000      4  1  8  8  8  2     11 42
##      £12,000-14,999        2  2  2  6  5  3      8 28
```

##	£15,000-19,999	6	1	7	13	15	9	12	63
##	£20,000-24,999	4	3	4	7	18	4	6	46
##	£25,000-34,999	2	2	8	10	10	11	9	52
##	£35,000-49,999	3	3	4	19	22	14	11	76
##	£50,000-74,999	2	5	4	6	13	10	5	45
##	£100,000-149,000	1	0	0	1	11	0	3	16
##	£150,000 or more	0	0	0	0	2	2	0	4
##	Prefer not to say	3	3	4	3	10	1	4	28
##	Sum	27	20	41	73	114	56	69	400

```
addmargins(inc.ocean)
```

##		Always	Most of the time	Sometimes	Rarely	Never	Sum
##	Less than £12,000	4	10	19	5	4	42
##	£12,000-14,999	3	4	13	5	3	28
##	£15,000-19,999	4	19	30	7	3	63
##	£20,000-24,999	2	10	28	6	0	46
##	£25,000-34,999	1	16	25	9	1	52
##	£35,000-49,999	3	24	35	12	2	76
##	£50,000-74,999	1	10	23	9	2	45
##	£100,000-149,000	0	5	9	1	1	16
##	£150,000 or more	1	0	3	0	0	4
##	Prefer not to say	0	6	15	6	1	28
##	Sum	19	104	200	60	17	400

```
addmargins(inc.actions)
```

##		Yes, definitely	Yes, probably	No, probably not
##	Less than £12,000	17	16	6
##	£12,000-14,999	10	13	5
##	£15,000-19,999	19	37	5
##	£20,000-24,999	17	19	8
##	£25,000-34,999	16	27	2
##	£35,000-49,999	34	35	4
##	£50,000-74,999	16	18	8
##	£100,000-149,000	3	11	1
##	£150,000 or more	1	3	0
##	Prefer not to say	9	12	4
##	Sum	142	191	43

##		No, definitely not	I don't know	Sum
##	Less than £12,000	2	1	42
##	£12,000-14,999	0	0	28
##	£15,000-19,999	2	0	63
##	£20,000-24,999	1	1	46
##	£25,000-34,999	3	4	52
##	£35,000-49,999	2	1	76
##	£50,000-74,999	1	2	45
##	£100,000-149,000	0	1	16
##	£150,000 or more	0	0	4
##	Prefer not to say	0	3	28
##	Sum	11	13	400

```
addmargins(inc.attplast)
```

```
##
## Will go out of their way to avoid
## Less than £12,000 11
## £12,000-14,999 9
## £15,000-19,999 23
## £20,000-24,999 8
## £25,000-34,999 14
## £35,000-49,999 21
## £50,000-74,999 7
## £100,000-149,000 5
## £150,000 or more 1
## Prefer not to say 3
## Sum 102
##
## If option is readily available, will avoid
## Less than £12,000 16
## £12,000-14,999 15
## £15,000-19,999 29
## £20,000-24,999 26
## £25,000-34,999 29
## £35,000-49,999 46
## £50,000-74,999 30
## £100,000-149,000 9
## £150,000 or more 3
## Prefer not to say 15
## Sum 218
##
## Will avoid only without extra costs Not a priority Sum
## Less than £12,000 10 5 42
## £12,000-14,999 3 1 28
## £15,000-19,999 7 4 63
## £20,000-24,999 9 3 46
## £25,000-34,999 5 4 52
## £35,000-49,999 6 3 76
## £50,000-74,999 8 0 45
## £100,000-149,000 1 1 16
## £150,000 or more 0 0 4
## Prefer not to say 9 1 28
## Sum 58 22 400
```

```
addmargins(inc.zerow)
```

```
##
## Yes, shops regularly Yes, shops occasionally
## Less than £12,000 2 0
## £12,000-14,999 0 2
## £15,000-19,999 2 12
## £20,000-24,999 2 3
## £25,000-34,999 0 3
## £35,000-49,999 4 4
```

##	£50,000-74,999	1	3
##	£100,000-149,000	2	3
##	£150,000 or more	0	0
##	Prefer not to say	1	0
##	Sum	14	30
##			
##		Yes, visited at least once	Yes, never visited
##	Less than £12,000	4	8
##	£12,000-14,999	1	6
##	£15,000-19,999	4	16
##	£20,000-24,999	3	6
##	£25,000-34,999	2	9
##	£35,000-49,999	2	23
##	£50,000-74,999	5	8
##	£100,000-149,000	1	3
##	£150,000 or more	2	2
##	Prefer not to say	0	7
##	Sum	24	88
##			
##		No, but would like to shop there	
##	Less than £12,000	23	
##	£12,000-14,999	13	
##	£15,000-19,999	20	
##	£20,000-24,999	22	
##	£25,000-34,999	30	
##	£35,000-49,999	33	
##	£50,000-74,999	18	
##	£100,000-149,000	5	
##	£150,000 or more	0	
##	Prefer not to say	11	
##	Sum	175	
##			
##		No, not likely to shop there	Sum
##	Less than £12,000	5	42
##	£12,000-14,999	6	28
##	£15,000-19,999	9	63
##	£20,000-24,999	10	46
##	£25,000-34,999	8	52
##	£35,000-49,999	10	76
##	£50,000-74,999	10	45
##	£100,000-149,000	2	16
##	£150,000 or more	0	4
##	Prefer not to say	9	28
##	Sum	69	400

```
## SUPs
addmargins(inc.bottpurchase)
```

##		None	1-2	3-5	6-10	11-15	16+	I don't know	Sum
##	Less than £12,000	2	15	13	10	1	0	1	42
##	£12,000-14,999	1	15	6	3	1	1	1	28
##	£15,000-19,999	1	27	15	9	4	5	2	63
##	£20,000-24,999	2	14	15	12	1	1	1	46

##	£25,000-34,999	1	13	21	12	3	0	2	52
##	£35,000-49,999	5	21	31	11	5	3	0	76
##	£50,000-74,999	0	13	14	13	3	1	1	45
##	£100,000-149,000	0	6	8	2	0	0	0	16
##	£150,000 or more	0	1	1	0	0	2	0	4
##	Prefer not to say	0	12	10	2	1	1	2	28
##	Sum	12	137	134	74	19	14	10	400

```
addmargins(inc.bottreuse)
```

##		Never	Once	2-4 times	5-10 times	More often	Sum
##	Less than £12,000	8	4	13	5	12	42
##	£12,000-14,999	4	6	8	4	6	28
##	£15,000-19,999	6	10	19	7	21	63
##	£20,000-24,999	11	4	11	10	10	46
##	£25,000-34,999	11	8	16	10	7	52
##	£35,000-49,999	14	13	27	12	10	76
##	£50,000-74,999	7	12	16	7	3	45
##	£100,000-149,000	2	2	7	1	4	16
##	£150,000 or more	2	0	2	0	0	4
##	Prefer not to say	6	7	10	1	4	28
##	Sum	71	66	129	57	77	400

```
addmargins(inc.bottdisp)
```

##		General waste bin	Recycling bin	Recycling centre
##	Less than £12,000	7	32	1
##	£12,000-14,999	3	23	1
##	£15,000-19,999	3	43	2
##	£20,000-24,999	4	36	1
##	£25,000-34,999	3	46	0
##	£35,000-49,999	3	67	4
##	£50,000-74,999	2	40	0
##	£100,000-149,000	1	12	0
##	£150,000 or more	0	3	1
##	Prefer not to say	1	26	0
##	Sum	27	328	10

##		Specialist waste collection	Landfill	Deposit return scheme
##	Less than £12,000	0	0	0
##	£12,000-14,999	0	0	0
##	£15,000-19,999	2	3	2
##	£20,000-24,999	2	0	1
##	£25,000-34,999	0	1	0
##	£35,000-49,999	1	0	0
##	£50,000-74,999	0	1	1
##	£100,000-149,000	2	0	0
##	£150,000 or more	0	0	0
##	Prefer not to say	0	0	0
##	Sum	7	5	4

##		Indefinite storage	Other	I don't know	Sum
##	Less than £12,000	0	1	1	42
##	£12,000-14,999	1	0	0	28
##	£15,000-19,999	8	0	0	63
##	£20,000-24,999	2	0	0	46
##	£25,000-34,999	1	1	0	52
##	£35,000-49,999	1	0	0	76
##	£50,000-74,999	1	0	0	45
##	£100,000-149,000	1	0	0	16
##	£150,000 or more	0	0	0	4
##	Prefer not to say	1	0	0	28
##	Sum	16	2	1	400

```
addmargins(inc.tubspurchase)
```

##		None	1-2	3-5	6-10	11-15	16+	I don't know	Sum
##	Less than £12,000	3	11	18	7	2	0	1	42
##	£12,000-14,999	1	11	10	4	2	0	0	28
##	£15,000-19,999	3	17	16	17	2	6	2	63
##	£20,000-24,999	0	15	15	8	4	2	2	46
##	£25,000-34,999	0	16	18	11	5	0	2	52
##	£35,000-49,999	3	14	30	22	4	2	1	76
##	£50,000-74,999	2	9	13	11	8	1	1	45
##	£100,000-149,000	0	4	8	1	2	1	0	16
##	£150,000 or more	0	1	2	0	0	1	0	4
##	Prefer not to say	0	10	13	4	0	0	1	28
##	Sum	12	108	143	85	29	13	10	400

```
addmargins(inc.tubreuse)
```

##		Never	Once	2-4 times	5-10 times	More often	Sum
##	Less than £12,000	5	3	12	6	16	42
##	£12,000-14,999	3	4	7	3	11	28
##	£15,000-19,999	10	2	11	10	30	63
##	£20,000-24,999	7	6	11	5	17	46
##	£25,000-34,999	10	3	9	13	17	52
##	£35,000-49,999	8	12	23	5	28	76
##	£50,000-74,999	10	5	12	9	9	45
##	£100,000-149,000	1	2	6	3	4	16
##	£150,000 or more	2	1	0	1	0	4
##	Prefer not to say	5	3	6	3	11	28
##	Sum	61	41	97	58	143	400

```
addmargins(inc.tubdisp)
```

##		General waste bin	Recycling bin	Recycling centre
##	Less than £12,000	7	24	2
##	£12,000-14,999	6	14	0
##	£15,000-19,999	8	33	3

##	£20,000-24,999	11	25	3
##	£25,000-34,999	10	28	7
##	£35,000-49,999	17	41	4
##	£50,000-74,999	16	22	5
##	£100,000-149,000	3	8	3
##	£150,000 or more	1	1	0
##	Prefer not to say	7	15	2
##	Sum	86	211	29

##	Specialist waste collection	Landfill	Deposit return scheme
##	Less than £12,000	2	0
##	£12,000-14,999	2	0
##	£15,000-19,999	3	1
##	£20,000-24,999	0	1
##	£25,000-34,999	0	0
##	£35,000-49,999	3	1
##	£50,000-74,999	0	0
##	£100,000-149,000	1	0
##	£150,000 or more	1	0
##	Prefer not to say	0	0
##	Sum	12	3

##	Indefinite storage	Other	I don't know	Sum
##	Less than £12,000	4	3	0 42
##	£12,000-14,999	5	0	1 28
##	£15,000-19,999	12	1	0 63
##	£20,000-24,999	5	0	1 46
##	£25,000-34,999	5	0	2 52
##	£35,000-49,999	6	1	1 76
##	£50,000-74,999	1	1	0 45
##	£100,000-149,000	1	0	0 16
##	£150,000 or more	1	0	0 4
##	Prefer not to say	2	1	1 28
##	Sum	42	7	6 400

```
addmargins(inc.filmpurchase)
```

##	None	1-2	3-5	6-10	11-15	16+	I don't know	Sum
##	Less than £12,000	2	10	14	9	6	0	1 42
##	£12,000-14,999	3	7	10	5	3	0	0 28
##	£15,000-19,999	4	13	15	16	4	7	4 63
##	£20,000-24,999	0	10	14	13	5	3	1 46
##	£25,000-34,999	0	13	16	16	4	1	2 52
##	£35,000-49,999	1	12	30	24	5	3	1 76
##	£50,000-74,999	1	9	10	14	9	1	1 45
##	£100,000-149,000	0	3	4	7	1	1	0 16
##	£150,000 or more	0	1	1	1	0	1	0 4
##	Prefer not to say	1	6	8	8	2	1	2 28
##	Sum	12	84	122	113	39	18	12 400

```
addmargins(inc.filmreuse)
```

```
##
##      Never Once 2-4 times 5-10 times More often Sum
## Less than £12,000      23   7         8         1       3 42
## £12,000-14,999       17   3         5         2       1 28
## £15,000-19,999       34  12        10         2       5 63
## £20,000-24,999       27  12         3         2       2 46
## £25,000-34,999       40   3         6         2       1 52
## £35,000-49,999       41  25         9         1       0 76
## £50,000-74,999       27  10         4         2       2 45
## £100,000-149,000      7   2         6         0       1 16
## £150,000 or more      2   1         1         0       0  4
## Prefer not to say     18   8         2         0       0 28
## Sum                   236  83        54        12      15 400
```

```
addmargins(inc.filmdisp)
```

```
##
##      General waste bin Recycling bin Recycling centre
## Less than £12,000      25         10         2
## £12,000-14,999       17          9         1
## £15,000-19,999       41         12         3
## £20,000-24,999       30         12         2
## £25,000-34,999       34         14         2
## £35,000-49,999       51         17         3
## £50,000-74,999       31         13         1
## £100,000-149,000     12          1         2
## £150,000 or more      2          0         0
## Prefer not to say     22          4         1
## Sum                   265        92        17
```

```
##
##      Specialist waste collection Landfill Deposit return scheme
## Less than £12,000      0          0         0
## £12,000-14,999       1          0         0
## £15,000-19,999       3          1         1
## £20,000-24,999       0          0         0
## £25,000-34,999       0          0         0
## £35,000-49,999       1          0         1
## £50,000-74,999       0          0         0
## £100,000-149,000     0          1         0
## £150,000 or more      1          1         0
## Prefer not to say     0          0         0
## Sum                   6          3         2
```

```
##
##      Indefinite storage Other I don't know Sum
## Less than £12,000      1          1         3 42
## £12,000-14,999       0          0         0 28
## £15,000-19,999       0          2         0 63
## £20,000-24,999       1          1         0 46
## £25,000-34,999       0          1         1 52
## £35,000-49,999       1          0         2 76
## £50,000-74,999       0          0         0 45
## £100,000-149,000     0          0         0 16
## £150,000 or more      0          0         0  4
## Prefer not to say     0          1         0 28
```

##	Sum	3	6	6	400
----	-----	---	---	---	-----

```
addmargins(inc.bagpurchase)
```

##		None	1-2	3-5	6-10	11-15	16+	I don't know	Sum
##	Less than £12,000	24	12	3	0	2	0	1	42
##	£12,000-14,999	11	9	5	2	1	0	0	28
##	£15,000-19,999	33	11	2	6	5	4	2	63
##	£20,000-24,999	23	10	7	2	1	2	1	46
##	£25,000-34,999	33	13	5	1	0	0	0	52
##	£35,000-49,999	51	9	8	3	2	1	2	76
##	£50,000-74,999	23	9	7	3	2	1	0	45
##	£100,000-149,000	10	1	4	0	1	0	0	16
##	£150,000 or more	1	1	1	1	0	0	0	4
##	Prefer not to say	23	2	1	1	0	0	1	28
##	Sum	232	77	43	19	14	8	7	400

```
addmargins(inc.bagreuse)
```

##		Never	Once	2-4 times	5-10 times	More often	Sum
##	Less than £12,000	4	4	6	5	23	42
##	£12,000-14,999	1	3	7	6	11	28
##	£15,000-19,999	4	9	14	13	23	63
##	£20,000-24,999	3	2	13	7	21	46
##	£25,000-34,999	5	5	12	7	23	52
##	£35,000-49,999	6	11	17	14	28	76
##	£50,000-74,999	2	7	9	14	13	45
##	£100,000-149,000	1	2	6	1	6	16
##	£150,000 or more	1	0	3	0	0	4
##	Prefer not to say	4	1	6	3	14	28
##	Sum	31	44	93	70	162	400

```
addmargins(inc.bagdisp)
```

##		General waste bin	Recycling bin	Recycling centre
##	Less than £12,000	13	11	1
##	£12,000-14,999	10	8	0
##	£15,000-19,999	17	12	5
##	£20,000-24,999	16	15	3
##	£25,000-34,999	20	6	5
##	£35,000-49,999	34	17	6
##	£50,000-74,999	18	10	4
##	£100,000-149,000	3	7	1
##	£150,000 or more	1	0	2
##	Prefer not to say	11	6	2
##	Sum	143	92	29

##		Specialist waste collection	Landfill	Deposit return scheme
##	Less than £12,000	0	0	2

##	£12,000-14,999	1	0	1	
##	£15,000-19,999	2	1	5	
##	£20,000-24,999	0	0	0	
##	£25,000-34,999	1	0	1	
##	£35,000-49,999	2	0	0	
##	£50,000-74,999	2	0	2	
##	£100,000-149,000	0	1	0	
##	£150,000 or more	0	0	0	
##	Prefer not to say	0	0	0	
##	Sum	8	2	11	
##					
##		Indefinite storage	Other	I don't know	Sum
##	Less than £12,000	9	4	2	42
##	£12,000-14,999	8	0	0	28
##	£15,000-19,999	13	6	2	63
##	£20,000-24,999	10	1	1	46
##	£25,000-34,999	12	5	2	52
##	£35,000-49,999	12	4	1	76
##	£50,000-74,999	7	2	0	45
##	£100,000-149,000	3	1	0	16
##	£150,000 or more	1	0	0	4
##	Prefer not to say	8	0	1	28
##	Sum	83	23	9	400

‘Vehicle ownership’ factor:

```
veh.choice <- table(data$vehicle_ownership, data$choice_plastic)
veh.barrier <- table(data$vehicle_ownership, data$barrier_recycling)
veh.barrier2 <- table(data$vehicle_ownership, data$barrier_reducing)
veh.mainconsid <- table(data$vehicle_ownership, data$main_con_plastic)
veh.litter <- table(data$vehicle_ownership, data$littering)
veh.attitude <- table(data$vehicle_ownership, data$attitude_disposal)
veh.ocean <- table(data$vehicle_ownership, data$plasticwaste_ocean)
veh.actions <- table(data$vehicle_ownership, data$individual_actions)
veh.attplast <- table(data$vehicle_ownership, data$attitude_plastic)
veh.zerow <- table(data$vehicle_ownership, data$zerowaste)

## SUPs
veh.bottpurchase <- table(data$vehicle_ownership, data$bottles_avgweek)
veh.bottreuse <- table(data$vehicle_ownership, data$bottles_reuses)
veh.bottdisp <- table(data$vehicle_ownership, data$bottles_disposal)
veh.tubspurchase <- table(data$vehicle_ownership, data$tubs_avgweek)
veh.tubreuse <- table(data$vehicle_ownership, data$tubs_reuses)
veh.tubdisp <- table(data$vehicle_ownership, data$tubs_disposal)
veh.filmpurchase <- table(data$vehicle_ownership, data$film_avgweek)
veh.filmreuse <- table(data$vehicle_ownership, data$film_reuses)
veh.filmdisp <- table(data$vehicle_ownership, data$film_disposal)
veh.bagpurchase <- table(data$vehicle_ownership, data$bags_avgweek)
veh.bagreuse <- table(data$vehicle_ownership, data$bags_reuses)
veh.bagdisp <- table(data$vehicle_ownership, data$bags_disposal)
```

```
addmargins(veh.choice)
```

```
##
##           Always As often as they can If cheaper or preferred
## No vehicle           10           56           44
## 1 or more vehicles    36          152           72
## Sum                   46          208          116
##
##           Rarely or never Sum
## No vehicle           8 118
## 1 or more vehicles   22 282
## Sum                  30 400
```

```
addmargins(veh.barrier)
```

```
##
##           Council collection Unclear information Difficult transport
## No vehicle           29           18           18
## 1 or more vehicles    86           44           13
## Sum                   115          62           31
##
##           No local facilities No support Ends up in landfills
## No vehicle           10           3           9
## 1 or more vehicles    25          15          24
## Sum                   35          18          33
##
##           Forgetting Recycling a hassle Household disagrees
## No vehicle           7           3           2
## 1 or more vehicles    18           7           3
## Sum                   25          10           5
##
##           Recycling not important Other Already doing everything Sum
## No vehicle           0           3          16 118
## 1 or more vehicles    5           1          41 282
## Sum                   5           4          57 400
```

```
addmargins(veh.barrier2)
```

```
##
##           Limited alternatives No SUP-free alternatives
## No vehicle           30           26
## 1 or more vehicles    60           59
## Sum                   90           85
##
##           Alternatives expensive Limited functioning
## No vehicle           27           9
## 1 or more vehicles    58          30
## Sum                   85          39
##
##           Forgetting reusables Reducing not important Other
## No vehicle           19           1           2
```

```
## 1 or more vehicles 21 12 6
## Sum 40 13 8
##
## No barriers Sum
## No vehicle 4 118
## 1 or more vehicles 36 282
## Sum 40 400
```

```
addmargins(veh.mainconsid)
```

```
##
## Value for money Price Quality Deals/discounts
## No vehicle 40 34 23 4
## 1 or more vehicles 79 63 65 22
## Sum 119 97 88 26
##
## Use-by-dates/longevity Convenience
## No vehicle 3 5
## 1 or more vehicles 11 5
## Sum 14 10
##
## Ease of recycling packaging Sustainability Brand Ethics
## No vehicle 4 4 0 1
## 1 or more vehicles 18 9 4 4
## Sum 22 13 4 5
##
## Other Sum
## No vehicle 0 118
## 1 or more vehicles 2 282
## Sum 2 400
```

```
addmargins(veh.litter)
```

```
##
## Strongly agree Agree Neither agree nor disagree Disagree
## No vehicle 53 52 9 1
## 1 or more vehicles 120 110 44 7
## Sum 173 162 53 8
##
## Strongly disagree Sum
## No vehicle 3 118
## 1 or more vehicles 1 282
## Sum 4 400
```

```
addmargins(veh.attitude)
```

```
##
## 1 (Not concerned) 2 3 4 5 6 7 (Very concerned)
## No vehicle 11 6 10 22 31 16 22
## 1 or more vehicles 16 14 31 51 83 40 47
## Sum 27 20 41 73 114 56 69
##
```

```
##
##      Sum
## No vehicle      118
## 1 or more vehicles 282
## Sum            400
```

```
addmargins(veh.ocean)
```

```
##
##      Always Most of the time Sometimes Rarely Never Sum
## No vehicle      3      31      62      18      4 118
## 1 or more vehicles 16      73     138     42     13 282
## Sum            19     104     200     60     17 400
```

```
addmargins(veh.actions)
```

```
##
##      Yes, definitely Yes, probably No, probably not
## No vehicle      39      63      12
## 1 or more vehicles 103     128     31
## Sum            142     191     43
##
##      No, definitely not I don't know Sum
## No vehicle      2      2 118
## 1 or more vehicles 9      11 282
## Sum            11     13 400
```

```
addmargins(veh.attplast)
```

```
##
##      Will go out of their way to avoid
## No vehicle      30
## 1 or more vehicles 72
## Sum            102
##
##      If option is readily available, will avoid
## No vehicle      65
## 1 or more vehicles 153
## Sum            218
##
##      Will avoid only without extra costs Not a priority Sum
## No vehicle      20      3 118
## 1 or more vehicles 38     19 282
## Sum            58     22 400
```

```
addmargins(veh.zerow)
```

```
##
##      Yes, shops regularly Yes, shops occasionally
## No vehicle      2      8
## 1 or more vehicles 12     22
## Sum            14     30
```

```
##
##          Yes, visited at least once Yes, never visited
## No vehicle          4          28
## 1 or more vehicles  20          60
## Sum                24          88
##
##          No, but would like to shop there
## No vehicle          54
## 1 or more vehicles  121
## Sum                175
##
##          No, not likely to shop there Sum
## No vehicle          22 118
## 1 or more vehicles  47 282
## Sum                69 400
```

```
## SUPs
addmargins(veh.bottpurchase)
```

```
##
##          None 1-2 3-5 6-10 11-15 16+ I don't know Sum
## No vehicle          6 45 40 16 9 0 2 118
## 1 or more vehicles  6 92 94 58 10 14 8 282
## Sum                12 137 134 74 19 14 10 400
```

```
addmargins(veh.bottreuse)
```

```
##
##          Never Once 2-4 times 5-10 times More often Sum
## No vehicle          17 17 39 17 28 118
## 1 or more vehicles  54 49 90 40 49 282
## Sum                71 66 129 57 77 400
```

```
addmargins(veh.bottdisp)
```

```
##
##          General waste bin Recycling bin Recycling centre
## No vehicle          12 100 0
## 1 or more vehicles  15 228 10
## Sum                27 328 10
##
##          Specialist waste collection Landfill Deposit return scheme
## No vehicle          0 0 1
## 1 or more vehicles  7 5 3
## Sum                7 5 4
##
##          Indefinite storage Other I don't know Sum
## No vehicle          3 2 0 118
## 1 or more vehicles  13 0 1 282
## Sum                16 2 1 400
```

```
addmargins(veh.tubspurchase)
```

```
##
##           None 1-2 3-5 6-10 11-15 16+ I don't know Sum
## No vehicle      6 35 42 22 8 2      3 118
## 1 or more vehicles 6 73 101 63 21 11      7 282
## Sum            12 108 143 85 29 13      10 400
```

```
addmargins(veh.tubreuse)
```

```
##
##           Never Once 2-4 times 5-10 times More often Sum
## No vehicle      17 8 31 14 48 118
## 1 or more vehicles 44 33 66 44 95 282
## Sum            61 41 97 58 143 400
```

```
addmargins(veh.tubdisp)
```

```
##
##           General waste bin Recycling bin Recycling centre
## No vehicle      25 72 6
## 1 or more vehicles 61 139 23
## Sum            86 211 29
##
##           Specialist waste collection Landfill Deposit return scheme
## No vehicle      1 0 0
## 1 or more vehicles 11 3 4
## Sum            12 3 4
##
##           Indefinite storage Other I don't know Sum
## No vehicle      9 2 3 118
## 1 or more vehicles 33 5 3 282
## Sum            42 7 6 400
```

```
addmargins(veh.filmpurchase)
```

```
##
##           None 1-2 3-5 6-10 11-15 16+ I don't know Sum
## No vehicle      7 24 33 32 15 3 4 118
## 1 or more vehicles 5 60 89 81 24 15 8 282
## Sum            12 84 122 113 39 18 12 400
```

```
addmargins(veh.filmreuse)
```

```
##
##           Never Once 2-4 times 5-10 times More often Sum
## No vehicle      70 26 14 3 5 118
## 1 or more vehicles 166 57 40 9 10 282
## Sum            236 83 54 12 15 400
```

```
addmargins(veh.filmdisp)
```

```
##
##           General waste bin Recycling bin Recycling centre
## No vehicle           74           32           5
## 1 or more vehicles    191          60          12
## Sum                  265          92          17
##
##           Specialist waste collection Landfill Deposit return scheme
## No vehicle           1           0           0
## 1 or more vehicles    5           3           2
## Sum                  6           3           2
##
##           Indefinite storage Other I don't know Sum
## No vehicle           1           3           2 118
## 1 or more vehicles    2           3           4 282
## Sum                  3           6           6 400
```

```
addmargins(veh.bagpurchase)
```

```
##
##           None 1-2 3-5 6-10 11-15 16+ I don't know Sum
## No vehicle        64 25 15   6   6   0           2 118
## 1 or more vehicles 168 52 28  13   8   8           5 282
## Sum              232 77 43  19  14   8           7 400
```

```
addmargins(veh.bagreuse)
```

```
##
##           Never Once 2-4 times 5-10 times More often Sum
## No vehicle        8  10       29       22       49 118
## 1 or more vehicles 23  34       64       48      113 282
## Sum              31  44       93       70      162 400
```

```
addmargins(veh.bagdisp)
```

```
##
##           General waste bin Recycling bin Recycling centre
## No vehicle           32           36           9
## 1 or more vehicles    111          56          20
## Sum                  143          92          29
##
##           Specialist waste collection Landfill Deposit return scheme
## No vehicle           3           0           2
## 1 or more vehicles    5           2           9
## Sum                  8           2          11
##
##           Indefinite storage Other I don't know Sum
## No vehicle           25           6           5 118
## 1 or more vehicles    58          17           4 282
## Sum                  83          23           9 400
```

‘Living situation’ factor:

```
liv.choice <- table(data$living_situation, data$choice_plastic)
liv.barrier <- table(data$living_situation, data$barrier_recycling)
liv.barrier2 <- table(data$living_situation, data$barrier_reducing)
liv.mainconsid <- table(data$living_situation, data$main_con_plastic)
liv.litter <- table(data$living_situation, data$littering)
liv.attitude <- table(data$living_situation, data$attitude_disposal)
liv.ocean <- table(data$living_situation, data$plasticwaste_ocean)
liv.actions <- table(data$living_situation, data$individual_actions)
liv.attplast <- table(data$living_situation, data$attitude_plastic)
liv.zerow <- table(data$living_situation, data$zerowaste)

## SUPs
liv.bottpurchase <- table(data$living_situation, data$bottles_avgweek)
liv.bottreuse <- table(data$living_situation, data$bottles_reuses)
liv.bottdisp <- table(data$living_situation, data$bottles_disposal)
liv.tubspurchase <- table(data$living_situation, data$tubs_avgweek)
liv.tubreuse <- table(data$living_situation, data$tubs_reuses)
liv.tubdisp <- table(data$living_situation, data$tubs_disposal)
liv.filmpurchase <- table(data$living_situation, data$film_avgweek)
liv.filmreuse <- table(data$living_situation, data$film_reuses)
liv.filmdisp <- table(data$living_situation, data$film_disposal)
liv.bagpurchase <- table(data$living_situation, data$bags_avgweek)
liv.bagreuse <- table(data$living_situation, data$bags_reuses)
liv.bagdisp <- table(data$living_situation, data$bags_disposal)
```

```
addmargins(liv.choice)
```

```
##
##              Always As often as they can
## I live alone          10          44
## I live with my parents/family      7          22
## I live in a house-/ flat-share      7          21
## I live with my partner/children    22         119
## Other                    0           2
## Sum                     46         208
##
##              If cheaper or preferred Rarely or never Sum
## I live alone          28          10  92
## I live with my parents/family    21           1  51
## I live in a house-/ flat-share     9           3  40
## I live with my partner/children   57          15 213
## Other                    1           1   4
## Sum                     116          30 400
```

```
addmargins(liv.barrier)
```

```
##
##              Council collection Unclear information
```

##	I live alone	26	10	
##	I live with my parents/family	10	12	
##	I live in a house-/ flat-share	11	7	
##	I live with my partner/children	67	32	
##	Other	1	1	
##	Sum	115	62	
##				
##		Difficult transport	No local facilities	
##	I live alone	10	7	
##	I live with my parents/family	5	4	
##	I live in a house-/ flat-share	2	5	
##	I live with my partner/children	14	18	
##	Other	0	1	
##	Sum	31	35	
##				
##		No support	Ends up in landfills	Forgetting
##	I live alone	5	2	7
##	I live with my parents/family	4	3	5
##	I live in a house-/ flat-share	1	5	2
##	I live with my partner/children	8	23	10
##	Other	0	0	1
##	Sum	18	33	25
##				
##		Recycling a hassle	Household disagrees	
##	I live alone	4	1	
##	I live with my parents/family	3	1	
##	I live in a house-/ flat-share	1	1	
##	I live with my partner/children	2	2	
##	Other	0	0	
##	Sum	10	5	
##				
##		Recycling not important	Other	
##	I live alone	2	0	
##	I live with my parents/family	1	0	
##	I live in a house-/ flat-share	0	1	
##	I live with my partner/children	2	3	
##	Other	0	0	
##	Sum	5	4	
##				
##		Already doing everything	Sum	
##	I live alone	18	92	
##	I live with my parents/family	3	51	
##	I live in a house-/ flat-share	4	40	
##	I live with my partner/children	32	213	
##	Other	0	4	
##	Sum	57	400	

```
addmargins(liv.barrier2)
```

##			
##		Limited alternatives	No SUP-free alternatives
##	I live alone	28	15
##	I live with my parents/family	7	11
##	I live in a house-/ flat-share	6	11

##	I live with my partner/children	49	47
##	Other	0	1
##	Sum	90	85
##			
##		Alternatives expensive	Limited functioning
##	I live alone	15	9
##	I live with my parents/family	17	5
##	I live in a house-/ flat-share	7	5
##	I live with my partner/children	45	20
##	Other	1	0
##	Sum	85	39
##			
##		Forgetting reusables	Reducing not important
##	I live alone	10	1
##	I live with my parents/family	6	4
##	I live in a house-/ flat-share	5	3
##	I live with my partner/children	19	4
##	Other	0	1
##	Sum	40	13
##			
##		Other No barriers	Sum
##	I live alone	1	13 92
##	I live with my parents/family	0	1 51
##	I live in a house-/ flat-share	1	2 40
##	I live with my partner/children	6	23 213
##	Other	0	1 4
##	Sum	8	40 400

```
addmargins(liv.mainconsid)
```

##				
##		Value for money	Price	Quality Deals/discounts
##	I live alone	26	16	27 5
##	I live with my parents/family	15	18	6 3
##	I live in a house-/ flat-share	17	9	4 4
##	I live with my partner/children	58	53	51 14
##	Other	3	1	0 0
##	Sum	119	97	88 26
##				
##		Use-by-dates/longevity	Convenience	
##	I live alone	3	4	
##	I live with my parents/family	0	1	
##	I live in a house-/ flat-share	2	0	
##	I live with my partner/children	9	5	
##	Other	0	0	
##	Sum	14	10	
##				
##		Ease of recycling packaging	Sustainability	
##	I live alone	5	2	
##	I live with my parents/family	2	3	
##	I live in a house-/ flat-share	3	1	
##	I live with my partner/children	12	7	
##	Other	0	0	
##	Sum	22	13	

```
##
##
##      Brand Ethics Other Sum
## I live alone      0      2      2 92
## I live with my parents/family      2      1      0 51
## I live in a house-/ flat-share      0      0      0 40
## I live with my partner/children      2      2      0 213
## Other      0      0      0 4
## Sum      4      5      2 400
```

```
addmargins(liv.litter)
```

```
##
##
##      Strongly agree Agree
## I live alone      31 43
## I live with my parents/family      23 18
## I live in a house-/ flat-share      15 14
## I live with my partner/children      104 85
## Other      0 2
## Sum      173 162
##
##      Neither agree nor disagree Disagree
## I live alone      14 3
## I live with my parents/family      8 1
## I live in a house-/ flat-share      7 3
## I live with my partner/children      22 1
## Other      2 0
## Sum      53 8
##
##      Strongly disagree Sum
## I live alone      1 92
## I live with my parents/family      1 51
## I live in a house-/ flat-share      1 40
## I live with my partner/children      1 213
## Other      0 4
## Sum      4 400
```

```
addmargins(liv.attitude)
```

```
##
##
##      1 (Not concerned) 2 3 4 5 6
## I live alone      6 4 9 16 25 12
## I live with my parents/family      8 2 5 14 13 6
## I live in a house-/ flat-share      5 2 7 6 6 4
## I live with my partner/children      7 12 19 36 69 34
## Other      1 0 1 1 1 0
## Sum      27 20 41 73 114 56
##
##      7 (Very concerned Sum
## I live alone      20 92
## I live with my parents/family      3 51
## I live in a house-/ flat-share      10 40
## I live with my partner/children      36 213
## Other      0 4
## Sum      69 400
```

```
addmargins(liv.ocean)
```

```
##
##
##      Always Most of the time Sometimes Rarely
## I live alone      2      18      50      19
## I live with my parents/family      5      15      26      5
## I live in a house-/ flat-share      2      14      20      0
## I live with my partner/children     10      56     103     35
## Other              0      1      1      1
## Sum                19     104     200     60
##
##      Never Sum
## I live alone      3  92
## I live with my parents/family      0  51
## I live in a house-/ flat-share      4  40
## I live with my partner/children     9 213
## Other              1   4
## Sum                17 400
```

```
addmargins(liv.actions)
```

```
##
##
##      Yes, definitely Yes, probably
## I live alone      39      38
## I live with my parents/family      13      27
## I live in a house-/ flat-share      13      20
## I live with my partner/children     77     102
## Other              0       4
## Sum                142     191
##
##      No, probably not No, definitely not
## I live alone      12       1
## I live with my parents/family      6       1
## I live in a house-/ flat-share      5       1
## I live with my partner/children     20       8
## Other              0       0
## Sum                43      11
##
##      I don't know Sum
## I live alone      2  92
## I live with my parents/family      4  51
## I live in a house-/ flat-share      1  40
## I live with my partner/children     6 213
## Other              0   4
## Sum                13 400
```

```
addmargins(liv.attplast)
```

```
##
##      Will go out of their way to avoid
## I live alone      31
```

```

## I live with my parents/family 14
## I live in a house-/ flat-share 12
## I live with my partner/children 45
## Other 0
## Sum 102
##
## If option is readily available, will avoid
## I live alone 39
## I live with my parents/family 29
## I live in a house-/ flat-share 20
## I live with my partner/children 127
## Other 3
## Sum 218
##
## Will avoid only without extra costs
## I live alone 15
## I live with my parents/family 5
## I live in a house-/ flat-share 7
## I live with my partner/children 31
## Other 0
## Sum 58
##
## Not a priority Sum
## I live alone 7 92
## I live with my parents/family 3 51
## I live in a house-/ flat-share 1 40
## I live with my partner/children 10 213
## Other 1 4
## Sum 22 400

```

```
addmargins(liv.zerow)
```

```

##
## Yes, shops regularly Yes, shops occasionally
## I live alone 5 7
## I live with my parents/family 2 4
## I live in a house-/ flat-share 1 2
## I live with my partner/children 6 17
## Other 0 0
## Sum 14 30
##
## Yes, visited at least once Yes, never visited
## I live alone 7 15
## I live with my parents/family 2 13
## I live in a house-/ flat-share 4 16
## I live with my partner/children 11 44
## Other 0 0
## Sum 24 88
##
## No, but would like to shop there
## I live alone 39
## I live with my parents/family 23
## I live in a house-/ flat-share 15
## I live with my partner/children 96

```

```
## Other 2
## Sum 175
##
## No, not likely to shop there Sum
## I live alone 19 92
## I live with my parents/family 7 51
## I live in a house-/ flat-share 2 40
## I live with my partner/children 39 213
## Other 2 4
## Sum 69 400
```

```
## SUPs
addmargins(liv.bottpurchase)
```

```
##
## None 1-2 3-5 6-10 11-15 16+ I don't know Sum
## I live alone 5 43 27 11 1 3 2 92
## I live with my parents/family 1 15 15 9 4 5 2 51
## I live in a house-/ flat-share 0 14 16 6 2 1 1 40
## I live with my partner/children 6 65 74 46 12 5 5 213
## Other 0 0 2 2 0 0 0 4
## Sum 12 137 134 74 19 14 10 400
```

```
addmargins(liv.bottreuse)
```

```
##
## Never Once 2-4 times 5-10 times More often
## I live alone 17 13 27 11 24
## I live with my parents/family 8 9 19 4 11
## I live in a house-/ flat-share 4 6 11 11 8
## I live with my partner/children 40 38 71 30 34
## Other 2 0 1 1 0
## Sum 71 66 129 57 77
##
## Sum
## I live alone 92
## I live with my parents/family 51
## I live in a house-/ flat-share 40
## I live with my partner/children 213
## Other 4
## Sum 400
```

```
addmargins(liv.bottdisp)
```

```
##
## General waste bin Recycling bin
## I live alone 7 75
## I live with my parents/family 9 32
## I live in a house-/ flat-share 3 32
## I live with my partner/children 7 186
## Other 1 3
## Sum 27 328
```

```
##
##
##      Recycling centre Specialist waste collection
##      I live alone                      3                      0
##      I live with my parents/family      2                      2
##      I live in a house-/ flat-share      1                      1
##      I live with my partner/children     4                      4
##      Other                              0                      0
##      Sum                                10                     7
##
##      Landfill Deposit return scheme
##      I live alone                      1                      1
##      I live with my parents/family      1                      1
##      I live in a house-/ flat-share      0                      0
##      I live with my partner/children     3                      2
##      Other                              0                      0
##      Sum                                5                      4
##
##      Indefinite storage Other I don't know Sum
##      I live alone                      4      1      0 92
##      I live with my parents/family      4      0      0 51
##      I live in a house-/ flat-share      1      1      1 40
##      I live with my partner/children     7      0      0 213
##      Other                              0      0      0 4
##      Sum                                16      2      1 400
```

```
addmargins(liv.tubspurchase)
```

```
##
##
##      None 1-2 3-5 6-10 11-15 16+ I don't know Sum
##      I live alone          4  33  35  12   2   3      3 92
##      I live with my parents/family  1   8  22  11   5   2      2 51
##      I live in a house-/ flat-share  0  15   9   9   5   1      1 40
##      I live with my partner/children  7  51  77  52  15   7      4 213
##      Other                  0   1   0   1   2   0      0 4
##      Sum                    12 108 143  85  29  13     10 400
```

```
addmargins(liv.tubreuse)
```

```
##
##
##      Never Once 2-4 times 5-10 times More often
##      I live alone          19   9      17      10      37
##      I live with my parents/family  6   5      10      8      22
##      I live in a house-/ flat-share  4   3      12      7      14
##      I live with my partner/children 30  24      57      32      70
##      Other                  2   0       1       1       0
##      Sum                    61  41      97      58     143
##
##      Sum
##      I live alone          92
##      I live with my parents/family  51
##      I live in a house-/ flat-share  40
##      I live with my partner/children 213
##      Other                  4
##      Sum                    400
```

```
addmargins(liv.tubdisp)
```

```
##
##              General waste bin Recycling bin
## I live alone              19          46
## I live with my parents/family      10          21
## I live in a house-/ flat-share      8          21
## I live with my partner/children    47         121
## Other                2           2
## Sum                86         211
##
##              Recycling centre Specialist waste collection
## I live alone              5           3
## I live with my parents/family      2           2
## I live in a house-/ flat-share      2           1
## I live with my partner/children    20           6
## Other                0           0
## Sum                29          12
##
##              Landfill Deposit return scheme
## I live alone              0           0
## I live with my parents/family      2           2
## I live in a house-/ flat-share      1           0
## I live with my partner/children    0           2
## Other                0           0
## Sum                3           4
##
##              Indefinite storage Other I don't know Sum
## I live alone              15      2           2  92
## I live with my parents/family      8      1           3  51
## I live in a house-/ flat-share      5      1           1  40
## I live with my partner/children    14      3           0 213
## Other                0      0           0   4
## Sum                42      7           6 400
```

```
addmargins(liv.filmpurchase)
```

```
##
##              None 1-2 3-5 6-10 11-15 16+ I don't know Sum
## I live alone              8  21  34  21    3   3           2  92
## I live with my parents/family      2   8  13  17    2   5           4  51
## I live in a house-/ flat-share      0   8   8  13    9   1           1  40
## I live with my partner/children    2  47  67  60   24   8           5 213
## Other                0   0   0   2    1   1           0   4
## Sum                12  84 122 113   39  18           12 400
```

```
addmargins(liv.filmreuse)
```

```
##
##              Never Once 2-4 times 5-10 times More often
## I live alone              57   16        13         2         4
```

##	I live with my parents/family	28	9	9	3	2
##	I live in a house-/ flat-share	15	11	6	4	4
##	I live with my partner/children	133	46	26	3	5
##	Other	3	1	0	0	0
##	Sum	236	83	54	12	15
##						
##		Sum				
##	I live alone	92				
##	I live with my parents/family	51				
##	I live in a house-/ flat-share	40				
##	I live with my partner/children	213				
##	Other	4				
##	Sum	400				

```
addmargins(liv.filmdisp)
```

##		General waste bin	Recycling bin	
##	I live alone	61	22	
##	I live with my parents/family	32	11	
##	I live in a house-/ flat-share	21	13	
##	I live with my partner/children	148	45	
##	Other	3	1	
##	Sum	265	92	
##				
##		Recycling centre	Specialist waste collection	
##	I live alone	4		1
##	I live with my parents/family	3		0
##	I live in a house-/ flat-share	3		0
##	I live with my partner/children	7		5
##	Other	0		0
##	Sum	17		6
##				
##		Landfill Deposit return scheme		
##	I live alone	0		0
##	I live with my parents/family	1		0
##	I live in a house-/ flat-share	0		0
##	I live with my partner/children	2		2
##	Other	0		0
##	Sum	3		2
##				
##		Indefinite storage	Other	I don't know Sum
##	I live alone	1	2	1 92
##	I live with my parents/family	2	1	1 51
##	I live in a house-/ flat-share	0	1	2 40
##	I live with my partner/children	0	2	2 213
##	Other	0	0	0 4
##	Sum	3	6	6 400

```
addmargins(liv.bagpurchase)
```

##		None	1-2	3-5	6-10	11-15	16+	I don't know	Sum
##									

##	I live alone	61	17	3	4	2	3	2	92
##	I live with my parents/family	22	8	11	3	4	2	1	51
##	I live in a house-/ flat-share	12	12	11	2	2	0	1	40
##	I live with my partner/children	135	38	18	10	6	3	3	213
##	Other	2	2	0	0	0	0	0	4
##	Sum	232	77	43	19	14	8	7	400

```
addmargins(liv.bagreuse)
```

##		Never	Once	2-4 times	5-10 times	More often
##	I live alone	7	9	15	13	48
##	I live with my parents/family	2	7	17	4	21
##	I live in a house-/ flat-share	0	4	10	16	10
##	I live with my partner/children	22	24	51	36	80
##	Other	0	0	0	1	3
##	Sum	31	44	93	70	162

##	Sum	
##	I live alone	92
##	I live with my parents/family	51
##	I live in a house-/ flat-share	40
##	I live with my partner/children	213
##	Other	4
##	Sum	400

```
addmargins(liv.bagdisp)
```

##		General waste bin	Recycling bin
##	I live alone	31	26
##	I live with my parents/family	14	9
##	I live in a house-/ flat-share	13	8
##	I live with my partner/children	84	48
##	Other	1	1
##	Sum	143	92

##		Recycling centre	Specialist waste collection
##	I live alone	4	0
##	I live with my parents/family	6	4
##	I live in a house-/ flat-share	3	0
##	I live with my partner/children	16	4
##	Other	0	0
##	Sum	29	8

##		Landfill	Deposit return scheme
##	I live alone	0	0
##	I live with my parents/family	0	2
##	I live in a house-/ flat-share	0	1
##	I live with my partner/children	2	8
##	Other	0	0
##	Sum	2	11

```
##                               Indefinite storage Other I don't know Sum
## I live alone                  23      6                2  92
## I live with my parents/family 13      1                2  51
## I live in a house-/ flat-share 6       7                2  40
## I live with my partner/children 39     9                3 213
## Other                        2       0                0   4
## Sum                          83     23                9 400
```

‘Postcode’ factor:

```
post.choice <- table(data$postcode, data$choice_plastic)
post.barrier <- table(data$postcode, data$barrier_recycling)
post.barrier2 <- table(data$postcode, data$barrier_reducing)
post.mainconsid <- table(data$postcode, data$main_con_plastic)
post.litter <- table(data$postcode, data$littering)
post.attitude <- table(data$postcode, data$attitude_disposal)
post.ocean <- table(data$postcode, data$plasticwaste_ocean)
post.actions <- table(data$postcode, data$individual_actions)
post.attplast <- table(data$postcode, data$attitude_plastic)
post.zerow <- table(data$postcode, data$zerowaste)

## SUPs
post.bottpurchase <- table(data$postcode, data$bottles_avgweek)
post.bottreuse <- table(data$postcode, data$bottles_reuses)
post.bottdisp <- table(data$postcode, data$bottles_disposal)
post.tubspurchase <- table(data$postcode, data$tubs_avgweek)
post.tubreuse <- table(data$postcode, data$tubs_reuses)
post.tubdisp <- table(data$postcode, data$tubs_disposal)
post.filmpurchase <- table(data$postcode, data$film_avgweek)
post.filmreuse <- table(data$postcode, data$film_reuses)
post.filmdisp <- table(data$postcode, data$film_disposal)
post.bagpurchase <- table(data$postcode, data$bags_avgweek)
post.bagreuse <- table(data$postcode, data$bags_reuses)
post.bagdisp <- table(data$postcode, data$bags_disposal)
```

```
addmargins(post.choice)
```

```
##
## Always As often as they can If cheaper or preferred Rarely or never Sum
## P01      8                31                23                7  69
## P02      3                42                19                2  66
## P03      4                30                14                1  49
## P04     14                41                22                5  82
## P05      9                37                20                6  72
## P06      8                27                18                9  62
## Sum     46               208               116               30 400
```

```
addmargins(post.barrier)
```

```
##
```

```

##      Council collection Unclear information Difficult transport
## P01          19          11          3
## P02          22           8          8
## P03          16           6          3
## P04          22          19          8
## P05          20           7          5
## P06          16          11          4
## Sum         115          62          31
##
##      No local facilities No support Ends up in landfills Forgetting
## P01           7           3           9           1
## P02           4           4           1           5
## P03           4           2           8           4
## P04           5           6           4           7
## P05           9           2           8           4
## P06           6           1           3           4
## Sum          35          18          33          25
##
##      Recycling a hassle Household disagrees Recycling not important Other
## P01           2           0           1           1
## P02           1           1           0           1
## P03           1           0           0           0
## P04           1           0           1           0
## P05           2           2           1           1
## P06           3           2           2           1
## Sum          10           5           5           4
##
##      Already doing everything Sum
## P01          12  69
## P02          11  66
## P03           5  49
## P04           9  82
## P05          11  72
## P06           9  62
## Sum          57 400

```

```
addmargins(post.barrier2)
```

```

##
##      Limited alternatives No SUP-free alternatives Alternatives expensive
## P01          20          15          11
## P02          13          13          16
## P03           8          11          14
## P04          18          16          14
## P05          13          20          15
## P06          18          10          15
## Sum          90          85          85
##
##      Limited functioning Forgetting reusables Reducing not important Other
## P01          10           5           2           0
## P02           5          11           3           2
## P03           4           4           0           1
## P04           7           7           4           1
## P05           6           9           4           2

```

```
##      P06              7              4              0      2
##      Sum             39             40             13      8
##
##      No barriers Sum
##      P01              6 69
##      P02              3 66
##      P03              7 49
##      P04             15 82
##      P05              3 72
##      P06              6 62
##      Sum             40 400
```

```
addmargins(post.mainconsid)
```

```
##
##      Value for money Price Quality Deals/discounts Use-by-dates/longevity
##      P01              22   16    12              6              5
##      P02              19   17     8              6              3
##      P03              18    9    13              2              1
##      P04              21   25    16              6              0
##      P05              25   15    20              3              2
##      P06              14   15    19              3              3
##      Sum             119   97    88             26             14
##
##      Convenience Ease of recycling packaging Sustainability Brand Ethics Other
##      P01              2              1              3      1      1      0
##      P02              2              7              2      1      1      0
##      P03              0              4              0      1      1      0
##      P04              2              4              3      1      2      2
##      P05              1              3              3      0      0      0
##      P06              3              3              2      0      0      0
##      Sum             10             22             13      4      5      2
##
##      Sum
##      P01 69
##      P02 66
##      P03 49
##      P04 82
##      P05 72
##      P06 62
##      Sum 400
```

```
addmargins(post.litter)
```

```
##
##      Strongly agree Agree Neither agree nor disagree Disagree
##      P01              26   31              8      1
##      P02              37   20              9      0
##      P03              19   22              7      1
##      P04              37   31             11      2
##      P05              25   36              8      3
##      P06              29   22             10      1
##      Sum             173  162             53      8
```

```
##
##      Strongly disagree Sum
## P01          3 69
## P02          0 66
## P03          0 49
## P04          1 82
## P05          0 72
## P06          0 62
## Sum          4 400
```

```
addmargins(post.attitude)
```

```
##
##      1 (Not concerned) 2 3 4 5 6 7 (Very concerned Sum
## P01          5 2 9 9 15 11          18 69
## P02          5 3 9 13 12 10          14 66
## P03          2 2 3 12 16 8           6 49
## P04          4 5 5 20 25 10          13 82
## P05          4 6 7 8 26 9           12 72
## P06          7 2 8 11 20 8           6 62
## Sum          27 20 41 73 114 56          69 400
```

```
addmargins(post.ocean)
```

```
##
##      Always Most of the time Sometimes Rarely Never Sum
## P01          5          19          31          11          3 69
## P02          3          18          34          9          2 66
## P03          0          14          28          5          2 49
## P04          6          22          38          11          5 82
## P05          4          17          37          12          2 72
## P06          1          14          32          12          3 62
## Sum          19          104          200          60          17 400
```

```
addmargins(post.actions)
```

```
##
##      Yes, definitely Yes, probably No, probably not No, definitely not
## P01          21          31          12          2
## P02          30          22          10          1
## P03          19          25          3          1
## P04          22          43          9          6
## P05          27          38          5          0
## P06          23          32          4          1
## Sum          142          191          43          11
##
##      I don't know Sum
## P01          3 69
## P02          3 66
## P03          1 49
## P04          2 82
## P05          2 72
```

##	P06	2	62
##	Sum	13	400

```
addmargins(post.attplast)
```

##	Will go out of their way to avoid		
##	P01	20	
##	P02	15	
##	P03	15	
##	P04	20	
##	P05	17	
##	P06	15	
##	Sum	102	
##	If option is readily available, will avoid		
##	P01	33	
##	P02	37	
##	P03	31	
##	P04	43	
##	P05	38	
##	P06	36	
##	Sum	218	
##	Will avoid only without extra costs Not a priority Sum		
##	P01	14	2 69
##	P02	10	4 66
##	P03	2	1 49
##	P04	13	6 82
##	P05	13	4 72
##	P06	6	5 62
##	Sum	58	22 400

```
addmargins(post.zerow)
```

##	Yes, shops regularly Yes, shops occasionally Yes, visited at least once		
##	P01	3	3 5
##	P02	0	1 3
##	P03	1	4 1
##	P04	2	6 6
##	P05	6	9 6
##	P06	2	7 3
##	Sum	14	30 24
##	Yes, never visited No, but would like to shop there		
##	P01	15	30
##	P02	11	33
##	P03	12	23
##	P04	22	40
##	P05	22	23
##	P06	6	26
##	Sum	88	175

```
##
##      No, not likely to shop there Sum
## P01                13 69
## P02                18 66
## P03                 8 49
## P04                 6 82
## P05                 6 72
## P06                18 62
## Sum                69 400
```

```
## SUPs
addmargins(post.bottpurchase)
```

```
##
##      None 1-2 3-5 6-10 11-15 16+ I don't know Sum
## P01      1 24 21  15   6   2           0 69
## P02      0 21 26  13   5   0           1 66
## P03      7 18 13   7   2   1           1 49
## P04      2 26 31  14   3   2           4 82
## P05      1 29 24  13   2   3           0 72
## P06      1 19 19  12   1   6           4 62
## Sum     12 137 134  74  19  14          10 400
```

```
addmargins(post.bottreuse)
```

```
##
##      Never Once 2-4 times 5-10 times More often Sum
## P01      13  13         18         10         15 69
## P02      11   7         24         12         12 66
## P03       5  10         22          4          8 49
## P04      20  10         26         11         15 82
## P05      13  11         21         13         14 72
## P06       9  15         18          7         13 62
## Sum      71  66        129         57         77 400
```

```
addmargins(post.bottdisp)
```

```
##
##      General waste bin Recycling bin Recycling centre
## P01                4          57           1
## P02                3          58           1
## P03                2          44           0
## P04                6          64           5
## P05                7          53           2
## P06                5          52           1
## Sum               27         328          10
##
##      Specialist waste collection Landfill Deposit return scheme
## P01                1          1           2
## P02                1          0           1
## P03                1          0           0
## P04                0          1           0
```

##	P05		3	2	0
##	P06		1	1	1
##	Sum		7	5	4
##					
##		Indefinite storage	Other	I don't know	Sum
##	P01		2	1	0 69
##	P02		2	0	0 66
##	P03		1	1	0 49
##	P04		5	0	1 82
##	P05		5	0	0 72
##	P06		1	0	0 62
##	Sum		16	2	1 400

```
addmargins(post.tubspurchase)
```

##										
##		None	1-2	3-5	6-10	11-15	16+	I don't know	Sum	
##	P01	2	22	30	8	5	2	0	69	
##	P02	1	14	28	13	7	2	1	66	
##	P03	1	13	12	19	4	0	0	49	
##	P04	3	24	26	17	7	2	3	82	
##	P05	3	15	26	18	4	4	2	72	
##	P06	2	20	21	10	2	3	4	62	
##	Sum	12	108	143	85	29	13	10	400	

```
addmargins(post.tubreuse)
```

##								
##		Never	Once	2-4 times	5-10 times	More often	Sum	
##	P01	14	10	15	7	23	69	
##	P02	9	5	19	13	20	66	
##	P03	7	9	6	4	23	49	
##	P04	14	6	19	17	26	82	
##	P05	8	7	20	11	26	72	
##	P06	9	4	18	6	25	62	
##	Sum	61	41	97	58	143	400	

```
addmargins(post.tubdisp)
```

##				
##		General waste bin	Recycling bin	Recycling centre
##	P01	12	44	4
##	P02	21	33	3
##	P03	10	25	6
##	P04	15	40	5
##	P05	15	39	4
##	P06	13	30	7
##	Sum	86	211	29
##				
##		Specialist waste collection	Landfill	Deposit return scheme
##	P01	1	1	1
##	P02	0	1	0

##	P03	2	0	0
##	P04	6	0	2
##	P05	2	1	1
##	P06	1	0	0
##	Sum	12	3	4

##		Indefinite storage	Other	I don't know	Sum
##	P01	6	0	0	69
##	P02	6	1	1	66
##	P03	4	0	2	49
##	P04	11	3	0	82
##	P05	8	0	2	72
##	P06	7	3	1	62
##	Sum	42	7	6	400

```
addmargins(post.filmpurchase)
```

##		None	1-2	3-5	6-10	11-15	16+	I don't know	Sum
##	P01	5	13	23	18	8	2	0	69
##	P02	1	13	21	19	8	2	2	66
##	P03	2	9	15	19	1	3	0	49
##	P04	3	26	26	18	4	1	4	82
##	P05	0	13	18	21	13	6	1	72
##	P06	1	10	19	18	5	4	5	62
##	Sum	12	84	122	113	39	18	12	400

```
addmargins(post.filmreuse)
```

##		Never	Once	2-4 times	5-10 times	More often	Sum
##	P01	37	15	11	3	3	69
##	P02	43	11	7	4	1	66
##	P03	30	15	2	2	0	49
##	P04	46	13	16	1	6	82
##	P05	44	13	10	2	3	72
##	P06	36	16	8	0	2	62
##	Sum	236	83	54	12	15	400

```
addmargins(post.filmdisp)
```

##		General waste bin	Recycling bin	Recycling centre
##	P01	45	16	4
##	P02	43	19	0
##	P03	38	11	0
##	P04	45	22	6
##	P05	50	12	4
##	P06	44	12	3
##	Sum	265	92	17

Specialist waste collection Landfill Deposit return scheme

##	P01		1	0		0
##	P02		1	0		0
##	P03		0	0		0
##	P04		2	1		1
##	P05		2	1		1
##	P06		0	1		0
##	Sum		6	3		2

##		Indefinite storage	Other	I don't know	Sum
##	P01	0	2	1	69
##	P02	0	2	1	66
##	P03	0	0	0	49
##	P04	2	1	2	82
##	P05	0	0	2	72
##	P06	1	1	0	62
##	Sum	3	6	6	400

```
addmargins(post.bagpurchase)
```

##		None	1-2	3-5	6-10	11-15	16+	I don't know	Sum
##	P01	37	14	7	5	5	1	0	69
##	P02	38	16	6	3	1	0	2	66
##	P03	30	12	4	2	0	1	0	49
##	P04	50	16	8	3	3	0	2	82
##	P05	36	13	13	4	4	2	0	72
##	P06	41	6	5	2	1	4	3	62
##	Sum	232	77	43	19	14	8	7	400

```
addmargins(post.bagreuse)
```

##		Never	Once	2-4 times	5-10 times	More often	Sum
##	P01	7	10	22	8	22	69
##	P02	2	5	18	12	29	66
##	P03	4	8	10	6	21	49
##	P04	9	3	10	20	40	82
##	P05	3	12	15	15	27	72
##	P06	6	6	18	9	23	62
##	Sum	31	44	93	70	162	400

```
addmargins(post.bagdisp)
```

##		General waste bin	Recycling bin	Recycling centre
##	P01	22	15	9
##	P02	29	13	3
##	P03	24	14	2
##	P04	17	19	5
##	P05	27	13	5
##	P06	24	18	5
##	Sum	143	92	29

```
##
##      Specialist waste collection Landfill Deposit return scheme
## P01                3          0                2
## P02                0          0                3
## P03                0          0                0
## P04                4          0                1
## P05                0          2                5
## P06                1          0                0
## Sum                8          2               11
##
##      Indefinite storage Other I don't know Sum
## P01                12         4           2 69
## P02                16         0           2 66
## P03                 8         0           1 49
## P04                25         9           2 82
## P05                12         7           1 72
## P06                10         3           1 62
## Sum                83        23           9 400
```

Pearson's Chi-squared tests for independence

Tests without Monte Carlo simulated p -value:

Age

```
chi.age.choice <- chisq.test(age.choice)
chi.age.attitude <- chisq.test(age.attitude)
chi.age.bottreuse <- chisq.test(age.bottreuse)
chi.age.tubreuse <- chisq.test(age.tubreuse)
chi.age.bagreuse <- chisq.test(age.bagreuse)
chi.age.attplast <- chisq.test(age.attplast)
```

```
chi.age.choice
```

```
##
## Pearson's Chi-squared test
##
## data:  age.choice
## X-squared = 5.0135, df = 6, p-value = 0.5421
```

```
chi.age.attitude
```

```
##
## Pearson's Chi-squared test
##
## data:  age.attitude
## X-squared = 28.288, df = 12, p-value = 0.00502
```

```
chi.age.bottreuse
```

```
##
## Pearson's Chi-squared test
##
## data: age.bottreuse
## X-squared = 8.4416, df = 8, p-value = 0.3916
```

```
chi.age.tubreuse
```

```
##
## Pearson's Chi-squared test
##
## data: age.tubreuse
## X-squared = 16.234, df = 8, p-value = 0.03915
```

```
chi.age.bagreuse
```

```
##
## Pearson's Chi-squared test
##
## data: age.bagreuse
## X-squared = 16.091, df = 8, p-value = 0.0411
```

```
chi.age.attplast
```

```
##
## Pearson's Chi-squared test
##
## data: age.attplast
## X-squared = 4.3744, df = 6, p-value = 0.6261
```

```
chi.age.choice$residuals
```

```
##
##               Always As often as they can If cheaper or preferred
## 30 and under  0.3355942      -0.8963622      1.1216126
## 31-50         0.6134848      0.2592350      -0.5654914
## 50+          -1.0495187      0.5143584      -0.3528211
##
##               Rarely or never
## 30 and under  -0.2608488
## 31-50         -0.3302891
## 50+           0.6390097
```

```
chi.age.attitude$residuals
```

```
##
##           1 (Not concerned)           2           3           4
```

```
## 30 and under      2.29353503  0.81520740  1.36724672  0.50800252
## 31-50             -1.41583160  0.06741999  0.22602317  0.68461113
## 50+               -0.40851905 -0.83344352 -1.53405227 -1.29436869
##
##                    5          6 7 (Very concerned
## 30 and under -0.25009111 -0.90062392      -2.31723595
## 31-50         0.11860432  0.07252407      -0.24682436
## 50+           0.08769849  0.74347218      2.43562469
```

```
chi.age.bottreuse$residuals
```

```
##
##              Never      Once  2-4 times  5-10 times  More often
## 30 and under -1.70318845 -0.24135844  1.00330314  0.34519909  0.26331698
## 31-50         0.31488876  0.73484692 -0.10087706 -0.81469753 -0.15118579
## 50+           1.19163667 -0.66357504 -0.80401176  0.66407236 -0.06060631
```

```
chi.age.tubreuse$residuals
```

```
##
##              Never      Once  2-4 times  5-10 times  More often
## 30 and under -1.1877822 -0.4793442 -0.9959483  0.7930998  1.3476090
## 31-50        -0.5481849  0.4614640  1.1204665  0.8868245 -1.3766650
## 50+           1.7570152 -0.1142908 -0.4324452 -1.8012855  0.4169807
```

```
chi.age.bagreuse$residuals
```

```
##
##              Never      Once  2-4 times  5-10 times  More often
## 30 and under -1.0556282 -0.6922149  0.8281193 -0.4769660  0.5086151
## 31-50        -0.4440549  1.9636364  0.3251588  0.2162250 -1.2176130
## 50+           1.5095009 -1.7295787 -1.1562011  0.1792843  0.9992347
```

```
chi.age.attplast$residuals
```

```
##
##              Will go out of their way to avoid
## 30 and under      -0.05170793
## 31-50              0.31645316
## 50+                -0.33394976
##
##              If option is readily available, will avoid
## 30 and under      0.24892125
## 31-50              0.31448225
## 50+               -0.60894120
##
##              Will avoid only without extra costs Not a priority
## 30 and under      0.01681941  -0.69954278
## 31-50             -0.69679067  -0.53997245
## 50+               0.82484314   1.29664799
```

```
chi.age.choice$observed
```

```
##
##           Always As often as they can If cheaper or preferred
## 30 and under      13              47              36
## 31-50             23              94              47
## 50+               10              67              33
##
##           Rarely or never
## 30 and under           7
## 31-50                 12
## 50+                   11
```

```
chi.age.choice$expected
```

```
##
##           Always As often as they can If cheaper or preferred
## 30 and under 11.845              53.56              29.87
## 31-50        20.240              91.52              51.04
## 50+          13.915              62.92              35.09
##
##           Rarely or never
## 30 and under   7.725
## 31-50          13.200
## 50+            9.075
```

```
chi.age.attitude$observed
```

```
##
##           1 (Not concerned) 2 3 4 5 6 7 (Very concerned)
## 30 and under      13 7 15 21 28 11      8
## 31-50             7 9 19 36 51 25      29
## 50+               7 4 7 16 35 20      32
```

```
chi.age.attitude$expected
```

```
##
##           1 (Not concerned) 2 3 4 5 6
## 30 and under      6.9525 5.15 10.5575 18.7975 29.355 14.42
## 31-50             11.8800 8.80 18.0400 32.1200 50.160 24.64
## 50+               8.1675 6.05 12.4025 22.0825 34.485 16.94
##
##           7 (Very concerned)
## 30 and under      17.7675
## 31-50             30.3600
## 50+               20.8725
```

```
chi.age.bottreuse$observed
```

```
##
##           Never Once 2-4 times 5-10 times More often
## 30 and under    11  16      39      16      21
## 31-50           33  33      56      21      33
## 50+             27  17      34      20      23
```

```
chi.age.bottreuse$expected
```

```
##
##           Never  Once 2-4 times 5-10 times More often
## 30 and under 18.2825 16.995  33.2175  14.6775  19.8275
## 31-50       31.2400 29.040  56.7600  25.0800  33.8800
## 50+        21.4775 19.965  39.0225  17.2425  23.2925
```

```
chi.age.tubreuse$observed
```

```
##
##           Never Once 2-4 times 5-10 times More often
## 30 and under    11   9      20      18      45
## 31-50           24  20      50      30      52
## 50+            26  12      27      10      46
```

```
chi.age.tubreuse$expected
```

```
##
##           Never  Once 2-4 times 5-10 times More often
## 30 and under 15.7075 10.5575  24.9775  14.935  36.8225
## 31-50       26.8400 18.0400  42.6800  25.520  62.9200
## 50+        18.4525 12.4025  29.3425  17.545  43.2575
```

```
chi.age.bagreuse$observed
```

```
##
##           Never Once 2-4 times 5-10 times More often
## 30 and under     5   9      28      16      45
## 31-50           12  28      43      32      61
## 50+            14   7      22      22      56
```

```
chi.age.bagreuse$expected
```

```
##
##           Never  Once 2-4 times 5-10 times More often
## 30 and under  7.9825 11.33  23.9475  18.025  41.715
## 31-50       13.6400 19.36  40.9200  30.800  71.280
## 50+         9.3775 13.31  28.1325  21.175  49.005
```

```
chi.age.attplast$observed
```

```
##
##          Will go out of their way to avoid
## 30 and under                26
## 31-50                      47
## 50+                        29
##
##          If option is readily available, will avoid
## 30 and under                58
## 31-50                      99
## 50+                        61
##
##          Will avoid only without extra costs Not a priority
## 30 and under                15      4
## 31-50                      22      8
## 50+                        21     10
```

```
chi.age.attplast$expected
```

```
##
##          Will go out of their way to avoid
## 30 and under                26.265
## 31-50                      44.880
## 50+                        30.855
##
##          If option is readily available, will avoid
## 30 and under                56.135
## 31-50                      95.920
## 50+                        65.945
##
##          Will avoid only without extra costs Not a priority
## 30 and under                14.935      5.665
## 31-50                      25.520      9.680
## 50+                        17.545      6.655
```

Education

All tests for ‘education’ with Monte Carlo. See the results under *Pearson’s Chi-square coefficients, i.e. Pearson’s chi-square tests with Monte Carlo*.

Gender

All tests for ‘gender’ with Monte Carlo. See the results under *Pearson’s Chi-square coefficients, i.e. Pearson’s chi-square tests with Monte Carlo*.

Income

All tests for ‘income’ with Monte Carlo. See the results under *Pearson’s Chi-square coefficients, i.e. Pearson’s chi-square tests with Monte Carlo*.

Vehicle ownership

```
chi.veh.choice <- chisq.test(veh.choice)
chi.veh.attitude <- chisq.test(veh.attitude)
chi.veh.ocean <- chisq.test(veh.ocean)
chi.veh.attplast <- chisq.test(veh.attplast)
chi.veh.bottreuse <- chisq.test(veh.bottreuse)
chi.veh.tubreuse <- chisq.test(veh.tubreuse)
chi.veh.bagreuse <- chisq.test(veh.bagreuse)
```

```
chi.veh.choice
```

```
##
## Pearson's Chi-squared test
##
## data:  veh.choice
## X-squared = 6.0768, df = 3, p-value = 0.1079
```

```
chi.veh.attitude
```

```
##
## Pearson's Chi-squared test
##
## data:  veh.attitude
## X-squared = 2.6753, df = 6, p-value = 0.8484
```

```
chi.veh.ocean
```

```
##
## Pearson's Chi-squared test
##
## data:  veh.ocean
## X-squared = 2.237, df = 4, p-value = 0.6923
```

```
chi.veh.attplast
```

```
##
## Pearson's Chi-squared test
##
## data:  veh.attplast
## X-squared = 3.3653, df = 3, p-value = 0.3387
```

```
chi.veh.bottreuse
```

```
##
## Pearson's Chi-squared test
##
## data:  veh.bottreuse
## X-squared = 3.2788, df = 4, p-value = 0.5123
```

```
chi.veh.tubreuse
```

```
##
## Pearson's Chi-squared test
##
## data:  veh.tubreuse
## X-squared = 4.2654, df = 4, p-value = 0.3713
```

```
chi.veh.bagreuse
```

```
##
## Pearson's Chi-squared test
##
## data:  veh.bagreuse
## X-squared = 1.4691, df = 4, p-value = 0.8321
```

```
chi.veh.choice$residuals
```

```
##
##               Always As often as they can If cheaper or preferred
## No vehicle      -0.9691216          -0.6842615          1.6718559
## 1 or more vehicles 0.6268949          0.4426277          -1.0814721
##
##               Rarely or never
## No vehicle      -0.2857244
## 1 or more vehicles 0.1848263
```

```
chi.veh.attitude$residuals
```

```
##
##               1 (Not concerned)          2          3          4
## No vehicle      1.07538953  0.04116935 -0.60239463  0.10020295
## 1 or more vehicles -0.69563633 -0.02663118  0.38967051 -0.06481820
##
##               5          6 7 (Very concerned
## No vehicle      -0.45351569 -0.12793764          0.36461149
## 1 or more vehicles 0.29336531  0.08275891          -0.23585593
```

```
chi.veh.ocean$residuals
```

```
##
##               Always Most of the time      Sometimes      Rarely
## No vehicle      -1.10032231          0.05777265  0.39056673  0.07130740
## 1 or more vehicles 0.71176457          -0.03737135 -0.25264558 -0.04612656
##
##               Never
## No vehicle      -0.45324244
## 1 or more vehicles 0.29318856
```

`chi.veh.attplast$residuals`

```
##
##          Will go out of their way to avoid
## No vehicle          -0.01640708
## 1 or more vehicles    0.01061324
##
##          If option is readily available, will avoid
## No vehicle          0.08604187
## 1 or more vehicles   -0.05565783
##
##          Will avoid only without extra costs Not a priority
## No vehicle          0.69867119   -1.36994483
## 1 or more vehicles   -0.45194885    0.88617507
```

`chi.veh.bottreuse$residuals`

```
##
##          Never          Once   2-4 times  5-10 times
## No vehicle   -0.86199913 -0.55977562  0.15318842  0.04511524
## 1 or more vehicles  0.55760065  0.36210159 -0.09909287 -0.02918366
##
##          More often
## No vehicle    1.10889039
## 1 or more vehicles -0.71730700
```

`chi.veh.tubreuse$residuals`

```
##
##          Never          Once   2-4 times  5-10 times  More often
## No vehicle   -0.2345563 -1.1774730  0.4458528 -0.7518572  0.8953043
## 1 or more vehicles  0.1517273  0.7616710 -0.2884084  0.4863533 -0.5791448
```

`chi.veh.bagreuse$residuals`

```
##
##          Never          Once   2-4 times  5-10 times  More often
## No vehicle   -0.3786288 -0.8271398  0.2987871  0.2970802  0.1750318
## 1 or more vehicles  0.2449233  0.5350512 -0.1932762 -0.1921720 -0.1132226
```

`chi.veh.choice$observed`

```
##
##          Always As often as they can If cheaper or preferred
## No vehicle          10          56          44
## 1 or more vehicles   36          152          72
##
##          Rarely or never
## No vehicle          8
## 1 or more vehicles  22
```

```
chi.veh.choice$expected
```

```
##
##           Always As often as they can If cheaper or preferred
## No vehicle      13.57              61.36              34.22
## 1 or more vehicles 32.43              146.64              81.78
##
##           Rarely or never
## No vehicle              8.85
## 1 or more vehicles      21.15
```

```
chi.veh.attitude$observed
```

```
##
##           1 (Not concerned) 2 3 4 5 6 7 (Very concerned
## No vehicle              11 6 10 22 31 16              22
## 1 or more vehicles      16 14 31 51 83 40              47
```

```
chi.veh.attitude$expected
```

```
##
##           1 (Not concerned) 2 3 4 5 6
## No vehicle              7.965 5.9 12.095 21.535 33.63 16.52
## 1 or more vehicles      19.035 14.1 28.905 51.465 80.37 39.48
##
##           7 (Very concerned
## No vehicle              20.355
## 1 or more vehicles      48.645
```

```
chi.veh.ocean$observed
```

```
##
##           Always Most of the time Sometimes Rarely Never
## No vehicle      3              31              62              18              4
## 1 or more vehicles 16              73              138              42              13
```

```
chi.veh.ocean$expected
```

```
##
##           Always Most of the time Sometimes Rarely Never
## No vehicle      5.605              30.68              59              17.7              5.015
## 1 or more vehicles 13.395              73.32              141              42.3              11.985
```

```
chi.veh.attplast$observed
```

```
##
##           Will go out of their way to avoid
## No vehicle              30
## 1 or more vehicles      72
```

```
##
##          If option is readily available, will avoid
## No vehicle                                65
## 1 or more vehicles                        153
##
##          Will avoid only without extra costs Not a priority
## No vehicle                                20          3
## 1 or more vehicles                        38          19
```

```
chi.veh.attplast$expected
```

```
##
##          Will go out of their way to avoid
## No vehicle                                30.09
## 1 or more vehicles                        71.91
##
##          If option is readily available, will avoid
## No vehicle                                64.31
## 1 or more vehicles                        153.69
##
##          Will avoid only without extra costs Not a priority
## No vehicle                                17.11          6.49
## 1 or more vehicles                        40.89          15.51
```

```
chi.veh.bottreuse$observed
```

```
##
##          Never Once 2-4 times 5-10 times More often
## No vehicle          17  17      39      17      28
## 1 or more vehicles  54  49      90      40      49
```

```
chi.veh.bottreuse$expected
```

```
##
##          Never Once 2-4 times 5-10 times More often
## No vehicle          20.945 19.47   38.055   16.815   22.715
## 1 or more vehicles  50.055 46.53   90.945   40.185   54.285
```

```
chi.veh.tubreuse$observed
```

```
##
##          Never Once 2-4 times 5-10 times More often
## No vehicle          17   8      31      14      48
## 1 or more vehicles  44  33      66      44      95
```

```
chi.veh.tubreuse$expected
```

```
##
##          Never Once 2-4 times 5-10 times More often
## No vehicle          17.995 12.095   28.615   17.11   42.185
## 1 or more vehicles  43.005 28.905   68.385   40.89  100.815
```

```
chi.veh.bagreuse$observed
```

```
##
##               Never Once 2-4 times 5-10 times More often
## No vehicle           8   10        29        22        49
## 1 or more vehicles   23   34        64        48       113
```

```
chi.veh.bagreuse$expected
```

```
##
##               Never Once 2-4 times 5-10 times More often
## No vehicle       9.145 12.98    27.435    20.65    47.79
## 1 or more vehicles 21.855 31.02    65.565    49.35   114.21
```

The remaining tests for ‘vehicle ownership’ with Monte Carlo. See the results under *Pearson’s Chi-square coefficients, i.e. Pearson’s chi-square tests with Monte Carlo.*

Living situation

All tests for ‘living situation’ with Monte Carlo. See the results under *Pearson’s Chi-square coefficients, i.e. Pearson’s chi-square tests with Monte Carlo.*

Postcode

```
chi.post.bottreuse <- chisq.test(post.bottreuse)
chi.post.tubreuse  <- chisq.test(post.tubreuse)
```

```
chi.post.bottreuse
```

```
##
## Pearson’s Chi-squared test
##
## data:  post.bottreuse
## X-squared = 17.119, df = 20, p-value = 0.6453
```

```
chi.post.tubreuse
```

```
##
## Pearson’s Chi-squared test
##
## data:  post.tubreuse
## X-squared = 23.175, df = 20, p-value = 0.2803
```

```
chi.post.bottreuse$residuals
```

```
##
##          Never      Once  2-4 times  5-10 times  More often
## P01  0.21502194  0.47863672 -0.90147755  0.05341741  0.47125594
## P02 -0.20889829 -1.17878788  0.58848176  0.84617066 -0.19778884
## P03 -1.25375005  0.67348630  1.55902700 -1.12869079 -0.46642436
## P04  1.42722281 -0.95967859 -0.08653429 -0.20039008 -0.19758199
## P05  0.06153997 -0.25531390 -0.46070388  0.85541504  0.03760507
## P06 -0.60439290  1.49135338 -0.44615133 -0.61735190  0.30827506
```

```
chi.post.tubreuse$residuals
```

```
##
##          Never      Once  2-4 times  5-10 times  More often
## P01  1.07203181  1.10080508 -0.42353843 -0.95002696 -0.33574015
## P02 -0.33569333 -0.67859524  0.74863304  1.10876154 -0.74009744
## P03 -0.17284979  1.77480325 -1.70650680 -1.16487564  1.30991338
## P04  0.42276531 -0.82955698 -0.19846342  1.48193779 -0.61226380
## P05 -0.89932174 -0.13987993  0.60787124  0.17331565  0.05124707
## P06 -0.14797237 -0.93418553  0.76466812 -0.99722083  0.60217011
```

```
chi.post.bottreuse$observed
```

```
##
##          Never Once 2-4 times 5-10 times More often
## P01      13   13      18      10      15
## P02      11    7      24      12      12
## P03       5   10      22       4       8
## P04      20   10      26      11      15
## P05      13   11      21      13      14
## P06       9   15      18       7      13
```

```
chi.post.bottreuse$expected
```

```
##
##          Never  Once 2-4 times 5-10 times More often
## P01 12.2475 11.385  22.2525   9.8325  13.2825
## P02 11.7150 10.890  21.2850   9.4050  12.7050
## P03  8.6975  8.085  15.8025   6.9825   9.4325
## P04 14.5550 13.530  26.4450  11.6850  15.7850
## P05 12.7800 11.880  23.2200  10.2600  13.8600
## P06 11.0050 10.230  19.9950   8.8350  11.9350
```

```
chi.post.tubreuse$observed
```

```
##
##          Never Once 2-4 times 5-10 times More often
## P01      14   10      15       7      23
## P02       9    5      19      13      20
## P03       7    9       6       4      23
## P04      14    6      19      17      26
## P05       8    7      20      11      26
## P06       9    4      18       6      25
```

```
chi.post.tubreuse$expected
```

```
##
##      Never  Once 2-4 times 5-10 times More often
## P01 10.5225 7.0725 16.7325 10.005 24.6675
## P02 10.0650 6.7650 16.0050 9.570 23.5950
## P03 7.4725 5.0225 11.8825 7.105 17.5175
## P04 12.5050 8.4050 19.8850 11.890 29.3150
## P05 10.9800 7.3800 17.4600 10.440 25.7400
## P06 9.4550 6.3550 15.0350 8.990 22.1650
```

The remaining tests for ‘postcode’ with Monte Carlo. See the results under *Pearson’s Chi-square coefficients*, i.e. *Pearson’s chi-square tests with Monte Carlo*.

Pearson’s Chi-square coefficients, i.e. Pearson’s chi-square tests with Monte Carlo

If the non-simulated test resulted in a warning, then Monte Carlo simulation was applied to the P-value.

Age

```
chi.age.barrier <- chisq.test(age.barrier)
```

```
## Warning in chisq.test(age.barrier): Chi-squared approximation may be incorrect
```

```
chi.age.barrier.sim <- chisq.test(age.barrier, simulate.p.value = TRUE)
chi.age.barrier.sim
```

```
##
## Pearson’s Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data: age.barrier
## X-squared = 55.559, df = NA, p-value = 0.0009995
```

```
chi.age.barrier2 <- chisq.test(age.barrier2)
```

```
## Warning in chisq.test(age.barrier2): Chi-squared approximation may be incorrect
```

```
chi.age.barrier2.sim <- chisq.test(age.barrier2, simulate.p.value = TRUE)
chi.age.barrier2.sim
```

```
##
## Pearson’s Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data: age.barrier2
## X-squared = 45.121, df = NA, p-value = 0.0004998
```

```
chi.age.mainconsid <- chisq.test(age.mainconsid)
```

```
## Warning in chisq.test(age.mainconsid): Chi-squared approximation may be  
## incorrect
```

```
chi.age.mainconsid.sim <- chisq.test(age.mainconsid, simulate.p.value =  
TRUE)  
chi.age.mainconsid.sim
```

```
##  
## Pearson's Chi-squared test with simulated p-value (based on 2000  
## replicates)  
##  
## data: age.mainconsid  
## X-squared = 45.252, df = NA, p-value = 0.001499
```

```
chi.age.litter.sim <- chisq.test(age.litter, simulate.p.value = TRUE)  
chi.age.litter.sim
```

```
##  
## Pearson's Chi-squared test with simulated p-value (based on 2000  
## replicates)  
##  
## data: age.litter  
## X-squared = 10.393, df = NA, p-value = 0.2344
```

```
chi.age.ocean.sim <- chisq.test(age.ocean, simulate.p.value = TRUE)  
chi.age.ocean.sim
```

```
##  
## Pearson's Chi-squared test with simulated p-value (based on 2000  
## replicates)  
##  
## data: age.ocean  
## X-squared = 26.28, df = NA, p-value = 0.001499
```

```
chi.age.actions.sim <- chisq.test(age.actions, simulate.p.value = TRUE)  
chi.age.actions.sim
```

```
##  
## Pearson's Chi-squared test with simulated p-value (based on 2000  
## replicates)  
##  
## data: age.actions  
## X-squared = 6.0794, df = NA, p-value = 0.6352
```

```
chi.age.zerow <- chisq.test(age.zerow)
```

```
## Warning in chisq.test(age.zerow): Chi-squared approximation may be incorrect
```

```
chi.age.zerow.sim <- chisq.test(age.zerow, simulate.p.value = TRUE)
chi.age.zerow.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data: age.zerow
## X-squared = 42.405, df = NA, p-value = 0.0004998
```

```
chi.age.bottpurchase <- chisq.test(age.bottpurchase)
```

```
## Warning in chisq.test(age.bottpurchase): Chi-squared approximation may be
## incorrect
```

```
chi.age.bottpurchase.sim <- chisq.test(age.bottpurchase, simulate.p.value =
TRUE)
chi.age.bottpurchase.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data: age.bottpurchase
## X-squared = 27.789, df = NA, p-value = 0.005997
```

```
chi.age.bottdisp <- chisq.test(age.bottdisp)
```

```
## Warning in chisq.test(age.bottdisp): Chi-squared approximation may be incorrect
```

```
chi.age.bottdisp.sim <- chisq.test(age.bottdisp, simulate.p.value = TRUE)
chi.age.bottdisp.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data: age.bottdisp
## X-squared = 27.039, df = NA, p-value = 0.02599
```

```
chi.age.tubpurchase <- chisq.test(age.tubpurchase)
```

```
## Warning in chisq.test(age.tubpurchase): Chi-squared approximation may be
## incorrect
```

```
chi.age.tubpurchase.sim <- chisq.test(age.tubpurchase, simulate.p.value =
TRUE)
chi.age.tubpurchase.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data: age.tubpurchase
## X-squared = 15.367, df = NA, p-value = 0.2244
```

```
chi.age.tubdisp <- chisq.test(age.tubdisp)
```

```
## Warning in chisq.test(age.tubdisp): Chi-squared approximation may be incorrect
```

```
chi.age.tubdisp.sim <- chisq.test(age.tubdisp, simulate.p.value = TRUE)
chi.age.tubdisp.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data: age.tubdisp
## X-squared = 31.216, df = NA, p-value = 0.007996
```

```
chi.age.filmpur <- chisq.test(age.filmpur)
```

```
## Warning in chisq.test(age.filmpur): Chi-squared approximation may be incorrect
```

```
chi.age.filmpur.sim <- chisq.test(age.filmpur, simulate.p.value = TRUE)
chi.age.filmpur.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data: age.filmpur
## X-squared = 24.006, df = NA, p-value = 0.02099
```

```
chi.age.filmreuse <- chisq.test(age.filmreuse)
```

```
## Warning in chisq.test(age.filmreuse): Chi-squared approximation may be incorrect
```

```
chi.age.filmreuse.sim <- chisq.test(age.filmreuse, simulate.p.value = TRUE)
chi.age.filmreuse.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data: age.filmreuse
## X-squared = 26.219, df = NA, p-value = 0.0004998
```

```
chi.age.filmdisp <- chisq.test(age.filmdisp)
```

```
## Warning in chisq.test(age.filmdisp): Chi-squared approximation may be incorrect
```

```
chi.age.filmdisp.sim <- chisq.test(age.filmdisp, simulate.p.value = TRUE)
chi.age.filmdisp.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data: age.filmdisp
## X-squared = 29.243, df = NA, p-value = 0.01549
```

```
chi.age.bagpurchase <- chisq.test(age.bagpurchase)
```

```
## Warning in chisq.test(age.bagpurchase): Chi-squared approximation may be
## incorrect
```

```
chi.age.bagpurchase.sim <- chisq.test(age.bagpurchase, simulate.p.value =
TRUE)
chi.age.bagpurchase.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data: age.bagpurchase
## X-squared = 70.888, df = NA, p-value = 0.0004998
```

```
chi.age.bagdisp <- chisq.test(age.bagdisp)
```

```
## Warning in chisq.test(age.bagdisp): Chi-squared approximation may be incorrect
```

```
chi.age.bagdisp.sim <- chisq.test(age.bagdisp, simulate.p.value = TRUE)
chi.age.bagdisp.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data: age.bagdisp
## X-squared = 28.893, df = NA, p-value = 0.01749
```

Simulated residuals for 'age':

```
chi.age.barrier.sim$residuals
```

```

##
## Council collection Unclear information Difficult transport
## 30 and under -2.50149913 2.76177234 -0.34774676
## 31-50 0.33739293 -1.96820772 0.09747546
## 50+ 1.90103821 -0.17433654 0.20328055
##
## No local facilities No support Ends up in landfills Forgetting
## 30 and under -0.67036796 -0.29495031 0.17238143 2.58648936
## 31-50 1.68183573 1.44976487 0.91326315 -0.60302269
## 50+ -1.40987096 -1.47635325 -1.26048048 -1.65909091
##
## Recycling a hassle Household disagrees Recycling not important
## 30 and under 0.88802716 1.50923532 -0.25337527
## 31-50 -0.19069252 -0.13483997 0.53935989
## 50+ -0.58933356 -1.22983739 -0.41672176
##
## Other Already doing everything
## 30 and under -0.02955988 -0.95990143
## 31-50 0.18090681 -1.01437829
## 50+ -0.19090909 2.10901675

```

```
chi.age.barrier2.sim$residuals
```

```

##
## Limited alternatives No SUP-free alternatives
## 30 and under -1.07498024 0.45154251
## 31-50 -0.73098799 -1.04651190
## 50+ 1.87340995 0.84553576
##
## Alternatives expensive Limited functioning Forgetting reusables
## 30 and under 0.02404664 2.51105212 -0.40506502
## 31-50 2.22383780 -1.00423346 1.28717450
## 50+ -2.70423537 -1.10561212 -1.17866713
##
## Reducing not important Other No barriers
## 30 and under 1.44975662 -0.73853700 -1.65141893
## 31-50 -0.30104712 -0.81016272 -0.38138504
## 50+ -0.97450739 1.65848681 1.98361053

```

```
chi.age.mainconsid.sim$residuals
```

```

##
## Value for money Price Quality Deals/discounts
## 30 and under 0.24523234 1.40513245 -1.81923138 -0.26860217
## 31-50 -0.87893609 1.27353569 -0.27641447 1.05253606
## 50+ 0.83377895 -2.83235428 2.01183949 -1.02158678
##
## Use-by-dates/longevity Convenience Ease of recycling packaging
## 30 and under 0.20803886 0.88802716 -0.69954278
## 31-50 -0.87028880 -1.62088640 0.10285190
## 50+ 0.85766562 1.13554516 0.52137266
##
## Sustainability Brand Ethics Other

```

```
## 30 and under -0.18993041 -0.02955988 1.50923532 -0.71763500
## 31-50 1.37143690 0.93468517 -1.48323970 -0.93808315
## 50+ -1.47878030 -1.10000000 0.39639387 1.79347993
```

```
chi.age.litter.sim$residuals
```

```
##
## Strongly agree Agree Neither agree nor disagree
## 30 and under 0.06779644 -0.26553269 0.09541850
## 31-50 -1.15992824 1.38817355 -0.48042291
## 50+ 1.33637530 -1.42921280 0.49137620
##
## Disagree Strongly disagree
## 30 and under -0.04180398 0.95576940
## 31-50 0.78884265 -0.57287155
## 50+ -0.91281057 -0.19090909
```

```
chi.age.ocean.sim$residuals
```

```
##
## Always Most of the time Sometimes Rarely Never
## 30 and under 1.85700107 2.16814124 -0.48771311 -2.40418325 -1.13633779
## 31-50 -0.47036584 -0.85148985 0.31980107 1.28452326 -0.90677781
## 50+ -1.14603587 -0.97344918 0.06428243 0.66896985 2.14203054
```

```
chi.age.actions.sim$residuals
```

```
##
## Yes, definitely Yes, probably No, probably not
## 30 and under -0.589558283 0.401752534 -0.622833114
## 31-50 0.571831301 -0.004363319 0.018392020
## 50+ -0.145712399 -0.365405176 0.552460730
##
## No, definitely not I don't know
## 30 and under 1.287876287 0.356631929
## 31-50 -1.290909091 -0.719168129
## 50+ 0.368666144 0.538311327
```

```
chi.age.zerow.sim$residuals
```

```
##
## Yes, shops regularly Yes, shops occasionally
## 30 and under 0.2080389 -0.2608488
## 31-50 1.5471801 1.8716384
## 50+ -2.0579116 -2.0166149
##
## Yes, visited at least once Yes, never visited
## 30 and under -0.8769246 1.3318622
## 31-50 1.6740443 -0.4371206
## 50+ -1.2098995 -0.7016242
##
```

##		No, but would like to shop there	No, not likely to shop there
##	30 and under	0.8844962	-2.3172360
##	31-50	-0.7977240	-1.1542669
##	50+	0.1460317	3.5300415

```
chi.age.bottpurchase.sim$residuals
```

##		None	1-2	3-5	6-10	11-15
##	30 and under	-0.62007934	-0.72018010	0.08426829	0.21648476	0.04860076
##	31-50	-0.99224264	-1.58165495	0.91684078	0.95335951	-0.12450860
##	50+	1.76879128	2.57200489	-1.18349974	-1.34952941	0.10532268
##		16+ I don't know				
##	30 and under	1.26140016	0.88802716			
##	31-50	0.74135713	0.28603878			
##	50+	-2.05791156	-1.16429314			

```
chi.age.bottdisp.sim$residuals
```

##		General waste bin	Recycling bin	Recycling centre
##	30 and under	0.39726795	-0.70292175	2.13438106
##	31-50	0.61507438	-0.02663709	-1.14415511
##	50+	-1.10833756	0.68065977	-0.58933356
##		Specialist waste collection	Landfill	Deposit return scheme
##	30 and under	-0.59773324	-0.25337527	-0.02955988
##	31-50	1.09402153	1.21355975	0.93468517
##	50+	-0.76795509	-1.22983739	-1.10000000
##		Indefinite storage	Other I don't know	
##	30 and under	1.41887416	-0.71763500	1.46321398
##	31-50	-1.14574311	-0.93808315	-0.66332496
##	50+	0.07272727	1.79347993	-0.55000000

```
chi.age.tubpurchase.sim$residuals
```

##		None	1-2	3-5	6-10	11-15
##	30 and under	0.5176809	-0.7224778	0.3588406	-0.4034492	0.5608063
##	31-50	-0.5570485	-1.3810161	0.1361537	1.2427329	0.0671871
##	50+	0.1941996	2.3321452	-0.4952833	-1.1265593	-0.5984454
##		16+ I don't know				
##	30 and under	0.9031943	-0.3583267			
##	31-50	0.1170739	0.7627701			
##	50+	-0.9745074	-0.5893336			

```
chi.age.tubdisp.sim$residuals
```

```
##
##          General waste bin Recycling bin Recycling centre
## 30 and under    -1.09332061   -1.13043469    0.92674839
## 31-50           0.51370231    0.84688140   -1.05259792
## 50+             0.38917828    0.02159162    0.41443823
##
##          Specialist waste collection   Landfill Deposit return scheme
## 30 and under          2.79320141  0.25884046   -0.02955988
## 31-50                 -0.55704850  0.59186403    0.93468517
## 50+                   -1.90525589 -0.95262794   -1.10000000
##
##          Indefinite storage           Other I don't know
## 30 and under          1.27257152 -0.59773324   1.97509166
## 31-50                 -1.50738442 -0.04558423  -1.00935023
## 50+                   0.64386580  0.60646118  -0.60494974
```

```
chi.age.filmpur.sim$residuals
```

```
##
##          None          1-2          3-5          6-10          11-15
## 30 and under -0.62007934 -0.56549333 -0.43087233  0.16730903  0.93326254
## 31-50        -0.99224264 -1.63829972  0.18016386  1.03244237  0.20277791
## 50+          1.76879128  2.49760294  0.18024844 -1.39953609 -1.10561212
##
##          16+ I don't know
## 30 and under  1.09851572 -0.05119921
## 31-50         0.38376129  0.74853392
## 50+          -1.47635325 -0.85552813
```

```
chi.age.filmreuse.sim$residuals
```

```
##
##          Never          Once    2-4 times    5-10 times    More often
## 30 and under -1.25328530 -0.08057468  1.90268504  1.65544116  0.06996300
## 31-50        -0.86750088  0.57585595  0.86984654 -0.55704850  0.93419873
## 50+          2.20255967 -0.62016807 -2.80454204 -0.85552813 -1.19123579
```

```
chi.age.filmdisp.sim$residuals
```

```
##
##          General waste bin Recycling bin Recycling centre
## 30 and under    -0.9972037    0.8855126    1.7313916
## 31-50           -0.8890413    0.8675986    0.5557670
## 50+             1.9922708    -1.8633606   -2.2677081
##
##          Specialist waste collection   Landfill Deposit return scheme
## 30 and under          0.3660557  0.2588405   -0.7176350
## 31-50                 0.8370221  0.5918640    1.1939240
## 50+                   -1.3472194 -0.9526279   -0.7778175
##
##          Indefinite storage           Other I don't know
## 30 and under          0.2588405 -0.4384623   0.3660557
```

##	31-50	0.5918640	0.2215647	-1.0093502
##	50+	-0.9526279	0.1373199	0.8795895

```
chi.age.bagpurchase.sim$residuals
```

##		None	1-2	3-5	6-10	11-15
##	30 and under	-2.42458256	1.38620391	2.98343824	0.95280092	0.20803886
##	31-50	-1.39358135	0.36422031	0.47819251	1.25892032	1.54718009
##	50+	3.91770648	-1.71821469	-3.32932106	-2.39739442	-2.05791156
##		16+ I don't know				
##	30 and under	-0.73853700	0.89194461			
##	31-50	1.85484623	-0.61538711			
##	50+	-1.55563492	-0.08074696			

```
chi.age.bagdisp.sim$residuals
```

##		General waste bin	Recycling bin	Recycling centre
##	30 and under	0.02925107	-0.55267491	1.29269049
##	31-50	-0.24205099	1.33911953	-0.21275915
##	50+	0.26493667	-1.10512639	-0.93607332
##		Specialist waste collection	Landfill	Deposit return scheme
##	30 and under	0.65492903	-0.71763500	-0.49465145
##	31-50	0.78884265	1.19392401	1.43636364
##	50+	-1.55563492	-0.77781746	-1.27594119
##		Indefinite storage	Other I don't know	
##	30 and under	0.35204107	-1.61179728	1.10521101
##	31-50	-1.74080592	-0.03772168	-0.48241815
##	50+	1.77468851	1.53258094	-0.43787879

Simulated observed and expected values for 'age':

```
chi.age.barrier.sim$observed
```

##		Council collection	Unclear information	Difficult transport
##	30 and under	16	27	7
##	31-50	53	17	14
##	50+	46	18	10
##		No local facilities	No support	Ends up in landfills
##	30 and under	7	4	9
##	31-50	22	12	18
##	50+	6	2	6
##		Recycling a hassle	Household disagrees	Recycling not important
##	30 and under	4	3	1
##	31-50	4	2	3

```
##      50+                2                0                1
##
##      Other Already doing everything
##      30 and under      1                11
##      31-50            2                20
##      50+              1                26
```

```
chi.age.barrier.sim$expected
```

```
##
##      Council collection Unclear information Difficult transport
##      30 and under      29.6125          15.965          7.9825
##      31-50            50.6000          27.280          13.6400
##      50+              34.7875          18.755          9.3775
##
##      No local facilities No support Ends up in landfills Forgetting
##      30 and under      9.0125          4.635          8.4975          6.4375
##      31-50            15.4000          7.920          14.5200          11.0000
##      50+              10.5875          5.445          9.9825          7.5625
##
##      Recycling a hassle Household disagrees Recycling not important
##      30 and under      2.575          1.2875          1.2875
##      31-50            4.400          2.2000          2.2000
##      50+              3.025          1.5125          1.5125
##
##      Other Already doing everything
##      30 and under      1.03          14.6775
##      31-50            1.76          25.0800
##      50+              1.21          17.2425
```

```
chi.age.barrier2.sim$observed
```

```
##
##      Limited alternatives No SUP-free alternatives
##      30 and under      18                24
##      31-50            35                31
##      50+              37                30
##
##      Alternatives expensive Limited functioning Forgetting reusables
##      30 and under      22                18                9
##      31-50            51                13                23
##      50+              12                8                8
##
##      Reducing not important Other No barriers
##      30 and under      6                1                5
##      31-50            5                2                16
##      50+              2                5                19
```

```
chi.age.barrier2.sim$expected
```

```
##
##      Limited alternatives No SUP-free alternatives
```

##	30 and under	23.175		21.8875	
##	31-50	39.600		37.4000	
##	50+	27.225		25.7125	
##					
##		Alternatives	expensive	Limited functioning	Forgetting reusables
##	30 and under	21.8875		10.0425	10.3
##	31-50	37.4000		17.1600	17.6
##	50+	25.7125		11.7975	12.1
##					
##		Reducing not important	Other	No barriers	
##	30 and under	3.3475	2.06	10.3	
##	31-50	5.7200	3.52	17.6	
##	50+	3.9325	2.42	12.1	

```
chi.age.mainconsid.sim$observed
```

##					
##		Value for money	Price	Quality	Deals/discounts
##	30 and under	32	32	14	6
##	31-50	46	51	37	15
##	50+	41	14	37	5
##					
##		Use-by-dates/longevity	Convenience	Ease of recycling	packaging
##	30 and under	4	4		4
##	31-50	4	1		10
##	50+	6	5		8
##					
##		Sustainability	Brand	Ethics	Other
##	30 and under	3	1	3	0
##	31-50	9	3	0	0
##	50+	1	0	2	2

```
chi.age.mainconsid.sim$expected
```

##					
##		Value for money	Price	Quality	Deals/discounts
##	30 and under	30.6425	24.9775	22.66	6.695
##	31-50	52.3600	42.6800	38.72	11.440
##	50+	35.9975	29.3425	26.62	7.865
##					
##		Use-by-dates/longevity	Convenience	Ease of recycling	packaging
##	30 and under	3.605	2.575		5.665
##	31-50	6.160	4.400		9.680
##	50+	4.235	3.025		6.655
##					
##		Sustainability	Brand	Ethics	Other
##	30 and under	3.3475	1.03	1.2875	0.515
##	31-50	5.7200	1.76	2.2000	0.880
##	50+	3.9325	1.21	1.5125	0.605

```
chi.age.litter.sim$observed
```

```
##
##           Strongly agree Agree Neither agree nor disagree Disagree
## 30 and under           45   40                        14       2
## 31-50                  66   83                        21       5
## 50+                    62   39                        18       1
##
##           Strongly disagree
## 30 and under           2
## 31-50                  1
## 50+                    1
```

```
chi.age.litter.sim$expected
```

```
##
##           Strongly agree Agree Neither agree nor disagree Disagree
## 30 and under  44.5475 41.715                        13.6475   2.06
## 31-50         76.1200 71.280                        23.3200   3.52
## 50+          52.3325 49.005                         16.0325   2.42
##
##           Strongly disagree
## 30 and under           1.03
## 31-50                 1.76
## 50+                   1.21
```

```
chi.age.ocean.sim$observed
```

```
##
##           Always Most of the time Sometimes Rarely Never
## 30 and under      9             38         48      6      2
## 31-50             7             40         91     33      5
## 50+              3             26         61     21     10
```

```
chi.age.ocean.sim$expected
```

```
##
##           Always Most of the time Sometimes Rarely Never
## 30 and under  4.8925             26.78      51.5  15.45 4.3775
## 31-50         8.3600             45.76      88.0  26.40 7.4800
## 50+          5.7475             31.46      60.5  18.15 5.1425
```

```
chi.age.actions.sim$observed
```

```
##
##           Yes, definitely Yes, probably No, probably not
## 30 and under           33             52              9
## 31-50                67             84              19
## 50+                 42             55              15
##
##           No, definitely not I don't know
## 30 and under           5              4
## 31-50                2              4
## 50+                  4              5
```

```
chi.age.actions.sim$expected
```

```
##
##           Yes, definitely Yes, probably No, probably not
## 30 and under      36.565      49.1825      11.0725
## 31-50             62.480      84.0400      18.9200
## 50+               42.955      57.7775      13.0075
##
##           No, definitely not I don't know
## 30 and under      2.8325      3.3475
## 31-50             4.8400      5.7200
## 50+               3.3275      3.9325
```

```
chi.age.zerow.sim$observed
```

```
##
##           Yes, shops regularly Yes, shops occasionally
## 30 and under      4      7
## 31-50             10     20
## 50+               0      3
##
##           Yes, visited at least once Yes, never visited
## 30 and under      4      29
## 31-50             16     36
## 50+               4      23
##
##           No, but would like to shop there No, not likely to shop there
## 30 and under      51      8
## 31-50             70     24
## 50+               54     37
```

```
chi.age.zerow.sim$expected
```

```
##
##           Yes, shops regularly Yes, shops occasionally
## 30 and under      3.605      7.725
## 31-50             6.160     13.200
## 50+               4.235      9.075
##
##           Yes, visited at least once Yes, never visited
## 30 and under      6.18     22.66
## 31-50             10.56     38.72
## 50+               7.26     26.62
##
##           No, but would like to shop there No, not likely to shop there
## 30 and under     45.0625     17.7675
## 31-50             77.0000     30.3600
## 50+              52.9375     20.8725
```

```
chi.age.bottpurchase.sim$observed
```

```
##
##          None 1-2 3-5 6-10 11-15 16+ I don't know
## 30 and under    2 31 35 20    5 6          4
## 31-50           3 48 66 38    8 8          5
## 50+             7 58 33 16    6 0          1
```

```
chi.age.bottpurchase.sim$expected
```

```
##
##          None      1-2      3-5      6-10      11-15      16+ I don't know
## 30 and under 3.09 35.2775 34.505 19.055 4.8925 3.605      2.575
## 31-50        5.28 60.2800 58.960 32.560 8.3600 6.160      4.400
## 50+          3.63 41.4425 40.535 22.385 5.7475 4.235      3.025
```

```
chi.age.bottdisp.sim$observed
```

```
##
##          General waste bin Recycling bin Recycling centre
## 30 and under              8              78              6
## 31-50                   14             144              2
## 50+                     5             106              2
##
##          Specialist waste collection Landfill Deposit return scheme
## 30 and under              1              1              1
## 31-50                   5              4              3
## 50+                     1              0              0
##
##          Indefinite storage Other I don't know
## 30 and under              7              0              1
## 31-50                   4              0              0
## 50+                     5              2              0
```

```
chi.age.bottdisp.sim$expected
```

```
##
##          General waste bin Recycling bin Recycling centre
## 30 and under          6.9525          84.46          2.575
## 31-50              11.8800          144.32          4.400
## 50+                8.1675          99.22          3.025
##
##          Specialist waste collection Landfill Deposit return scheme
## 30 and under          1.8025          1.2875          1.03
## 31-50              3.0800          2.2000          1.76
## 50+                2.1175          1.5125          1.21
##
##          Indefinite storage Other I don't know
## 30 and under          4.12 0.515          0.2575
## 31-50              7.04 0.880          0.4400
## 50+                4.84 0.605          0.3025
```

```
chi.age.tubpurchase.sim$observed
```

```
##
##           None 1-2 3-5 6-10 11-15 16+ I don't know
## 30 and under   4 24 39  20    9   5           2
## 31-50          4 38 64  45   13   6           6
## 50+            4 46 40  20    7   2           2
```

```
chi.age.tubpurchase.sim$expected
```

```
##
##           None 1-2 3-5 6-10 11-15 16+ I don't know
## 30 and under 3.09 27.81 36.8225 21.8875 7.4675 3.3475 2.575
## 31-50        5.28 47.52 62.9200 37.4000 12.7600 5.7200 4.400
## 50+          3.63 32.67 43.2575 25.7125 8.7725 3.9325 3.025
```

```
chi.age.tubdisp.sim$observed
```

```
##
##           General waste bin Recycling bin Recycling centre
## 30 and under           17           46           10
## 31-50                 41          101           9
## 50+                   28           64           10
##
##           Specialist waste collection Landfill Deposit return scheme
## 30 and under           8           1           1
## 31-50                 4           2           3
## 50+                   0           0           0
##
##           Indefinite storage Other I don't know
## 30 and under           15           1           4
## 31-50                 12           3           1
## 50+                   15           3           1
```

```
chi.age.tubdisp.sim$expected
```

```
##
##           General waste bin Recycling bin Recycling centre
## 30 and under          22.145          54.3325          7.4675
## 31-50                37.840          92.8400         12.7600
## 50+                  26.015          63.8275          8.7725
##
##           Specialist waste collection Landfill Deposit return scheme
## 30 and under          3.09    0.7725           1.03
## 31-50                5.28    1.3200           1.76
## 50+                  3.63    0.9075           1.21
##
##           Indefinite storage Other I don't know
## 30 and under          10.815    1.8025          1.545
## 31-50                18.480    3.0800          2.640
## 50+                  12.705    2.1175          1.815
```

```
chi.age.filmpur.sim$observed
```

```
##
##           None 1-2 3-5 6-10 11-15 16+ I don't know
## 30 and under   2 19 29  30   13   7           3
## 31-50          3 27 55  57   18   9           7
## 50+           7 38 38  26    8   2           2
```

```
chi.age.filmpur.sim$expected
```

```
##
##           None 1-2 3-5 6-10 11-15 16+ I don't know
## 30 and under 3.09 21.63 31.415 29.0975 10.0425 4.635 3.09
## 31-50        5.28 36.96 53.680 49.7200 17.1600 7.920 5.28
## 50+          3.63 25.41 36.905 34.1825 11.7975 5.445 3.63
```

```
chi.age.filmreuse.sim$observed
```

```
##
##           Never Once 2-4 times 5-10 times More often
## 30 and under   51  21        21         6         4
## 31-50          95  40        28         4         9
## 50+           90  22         5         2         2
```

```
chi.age.filmreuse.sim$expected
```

```
##
##           Never Once 2-4 times 5-10 times More often
## 30 and under 60.77 21.3725 13.905 3.09 3.8625
## 31-50       103.84 36.5200 23.760 5.28 6.6000
## 50+         71.39 25.1075 16.335 3.63 4.5375
```

```
chi.age.filmdisp.sim$observed
```

```
##
##           General waste bin Recycling bin Recycling centre
## 30 and under           60          28          8
## 31-50                107          46          9
## 50+                  98          18          0
##
##           Specialist waste collection Landfill Deposit return scheme
## 30 and under           2          1          0
## 31-50                4          2          2
## 50+                  0          0          0
##
##           Indefinite storage Other I don't know
## 30 and under           1          1          2
## 31-50                2          3          1
## 50+                  0          2          3
```

```
chi.age.filmdisp.sim$expected
```

```
##
##           General waste bin Recycling bin Recycling centre
## 30 and under      68.2375      23.69      4.3775
## 31-50             116.6000      40.48      7.4800
## 50+               80.1625      27.83      5.1425
##
##           Specialist waste collection Landfill Deposit return scheme
## 30 and under      1.545  0.7725      0.515
## 31-50             2.640  1.3200      0.880
## 50+               1.815  0.9075      0.605
##
##           Indefinite storage Other I don't know
## 30 and under      0.7725 1.545      1.545
## 31-50             1.3200 2.640      2.640
## 50+               0.9075 1.815      1.815
```

```
chi.age.bagpurchase.sim$observed
```

```
##
##           None 1-2 3-5 6-10 11-15 16+ I don't know
## 30 and under  41 26 21   7   4   1           3
## 31-50         88 36 21  12  10   7           2
## 50+          103 15  1   0   0   0           2
```

```
chi.age.bagpurchase.sim$expected
```

```
##
##           None      1-2      3-5      6-10 11-15 16+ I don't know
## 30 and under 59.74 19.8275 11.0725 4.8925 3.605 2.06      1.8025
## 31-50       102.08 33.8800 18.9200 8.3600 6.160 3.52      3.0800
## 50+         70.18 23.2925 13.0075 5.7475 4.235 2.42      2.1175
```

```
chi.age.bagdisp.sim$observed
```

```
##
##           General waste bin Recycling bin Recycling centre
## 30 and under      37      21      11
## 31-50             61      49      12
## 50+              45      22       6
##
##           Specialist waste collection Landfill Deposit return scheme
## 30 and under      3       0       2
## 31-50             5       2       8
## 50+              0       0       1
##
##           Indefinite storage Other I don't know
## 30 and under      23       2       4
## 31-50             26      10       3
## 50+              34      11       2
```

```
chi.age.bagdisp.sim$expected
```

```
##
##           General waste bin Recycling bin Recycling centre
## 30 and under      36.8225      23.69      7.4675
## 31-50             62.9200      40.48     12.7600
## 50+              43.2575      27.83      8.7725
##
##           Specialist waste collection Landfill Deposit return scheme
## 30 and under              2.06    0.515      2.8325
## 31-50                    3.52    0.880      4.8400
## 50+                      2.42    0.605      3.3275
##
##           Indefinite storage    Other I don't know
## 30 and under      21.3725  5.9225      2.3175
## 31-50             36.5200 10.1200      3.9600
## 50+              25.1075  6.9575      2.7225
```

Education

```
chi.edu.choice <- chisq.test(edu.choice)
```

```
## Warning in chisq.test(edu.choice): Chi-squared approximation may be incorrect
```

```
chi.edu.choice.sim <- chisq.test(edu.choice, simulate.p.value = TRUE)
chi.edu.choice.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data:  edu.choice
## X-squared = 15.809, df = NA, p-value = 0.1974
```

```
chi.edu.barrier <- chisq.test(edu.barrier)
```

```
## Warning in chisq.test(edu.barrier): Chi-squared approximation may be incorrect
```

```
chi.edu.barrier.sim <- chisq.test(edu.barrier, simulate.p.value = TRUE)
chi.edu.barrier.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data:  edu.barrier
## X-squared = 46.267, df = NA, p-value = 0.3098
```

```
chi.edu.barrier2 <- chisq.test(edu.barrier2)
```

```
## Warning in chisq.test(edu.barrier2): Chi-squared approximation may be incorrect
```

```
chi.edu.barrier2.sim <- chisq.test(edu.barrier2, simulate.p.value = TRUE)
chi.edu.barrier2.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data:  edu.barrier2
## X-squared = 34.124, df = NA, p-value = 0.1994
```

```
chi.edu.mainconsid <- chisq.test(edu.mainconsid)
```

```
## Warning in chisq.test(edu.mainconsid): Chi-squared approximation may be
## incorrect
```

```
chi.edu.mainconsid.sim <- chisq.test(edu.mainconsid, simulate.p.value =
TRUE)
chi.edu.mainconsid.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data:  edu.mainconsid
## X-squared = 53.357, df = NA, p-value = 0.1144
```

```
chi.edu.litter <- chisq.test(edu.litter)
```

```
## Warning in chisq.test(edu.litter): Chi-squared approximation may be incorrect
```

```
chi.edu.litter.sim <- chisq.test(edu.litter, simulate.p.value = TRUE)
chi.edu.litter.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data:  edu.litter
## X-squared = 12.056, df = NA, p-value = 0.6517
```

```
chi.edu.attitude <- chisq.test(edu.attitude)
```

```
## Warning in chisq.test(edu.attitude): Chi-squared approximation may be incorrect
```

```
chi.edu.attitude.sim <- chisq.test(edu.attitude, simulate.p.value = TRUE)
chi.edu.attitude.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data:  edu.attitude
## X-squared = 32.012, df = NA, p-value = 0.1254
```

```
chi.edu.ocean <- chisq.test(edu.ocean)
```

```
## Warning in chisq.test(edu.ocean): Chi-squared approximation may be incorrect
```

```
chi.edu.ocean.sim <- chisq.test(edu.ocean, simulate.p.value = TRUE)
chi.edu.ocean.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data:  edu.ocean
## X-squared = 11.53, df = NA, p-value = 0.7321
```

```
chi.edu.actions <- chisq.test(edu.actions)
```

```
## Warning in chisq.test(edu.actions): Chi-squared approximation may be incorrect
```

```
chi.edu.actions.sim <- chisq.test(edu.actions, simulate.p.value = TRUE)
chi.edu.actions.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data:  edu.actions
## X-squared = 13.906, df = NA, p-value = 0.5242
```

```
chi.edu.attplast <- chisq.test(edu.attplast)
```

```
## Warning in chisq.test(edu.attplast): Chi-squared approximation may be incorrect
```

```
chi.edu.attplast.sim <- chisq.test(edu.attplast, simulate.p.value = TRUE)
chi.edu.attplast.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data:  edu.attplast
## X-squared = 11.984, df = NA, p-value = 0.4368
```

```
chi.edu.zerow <- chisq.test(edu.zerow)
```

```
## Warning in chisq.test(edu.zerow): Chi-squared approximation may be incorrect
```

```
chi.edu.zerow.sim <- chisq.test(edu.zerow, simulate.p.value = TRUE)
chi.edu.zerow.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data:  edu.zerow
## X-squared = 35.131, df = NA, p-value = 0.02999
```

```
chi.edu.bottpurchase <- chisq.test(edu.bottpurchase)
```

```
## Warning in chisq.test(edu.bottpurchase): Chi-squared approximation may be
## incorrect
```

```
chi.edu.bottpurchase.sim <- chisq.test(edu.bottpurchase, simulate.p.value =
TRUE)
chi.edu.bottpurchase.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data:  edu.bottpurchase
## X-squared = 19.015, df = NA, p-value = 0.6862
```

```
chi.edu.bottreuse <- chisq.test(edu.bottreuse)
```

```
## Warning in chisq.test(edu.bottreuse): Chi-squared approximation may be incorrect
```

```
chi.edu.bottreuse.sim <- chisq.test(edu.bottreuse, simulate.p.value = TRUE)
chi.edu.bottreuse.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data:  edu.bottreuse
## X-squared = 17.437, df = NA, p-value = 0.3333
```

```
chi.edu.bottdisp <- chisq.test(edu.bottdisp)
```

```
## Warning in chisq.test(edu.bottdisp): Chi-squared approximation may be incorrect
```

```
chi.edu.bottdisp.sim <- chisq.test(edu.bottdisp, simulate.p.value = TRUE)
chi.edu.bottdisp.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data:  edu.bottdisp
## X-squared = 72.654, df = NA, p-value = 0.03298
```

```
chi.edu.tubspurchase <- chisq.test(edu.tubspurchase)
```

```
## Warning in chisq.test(edu.tubspurchase): Chi-squared approximation may be
## incorrect
```

```
chi.edu.tubspurchase.sim <- chisq.test(edu.tubspurchase, simulate.p.value =
TRUE)
chi.edu.tubspurchase.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data:  edu.tubspurchase
## X-squared = 23.149, df = NA, p-value = 0.4703
```

```
chi.edu.tubsreuse <- chisq.test(edu.tubsreuse)
```

```
## Warning in chisq.test(edu.tubsreuse): Chi-squared approximation may be incorrect
```

```
chi.edu.tubsreuse.sim <- chisq.test(edu.tubsreuse, simulate.p.value = TRUE)
chi.edu.tubsreuse.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data:  edu.tubsreuse
## X-squared = 20.014, df = NA, p-value = 0.1929
```

```
chi.edu.tubdisp <- chisq.test(edu.tubdisp)
```

```
## Warning in chisq.test(edu.tubdisp): Chi-squared approximation may be incorrect
```

```
chi.edu.tubdisp.sim <- chisq.test(edu.tubdisp, simulate.p.value = TRUE)
chi.edu.tubdisp.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data:  edu.tubdisp
## X-squared = 31.983, df = NA, p-value = 0.3538
```

```
chi.edu.filmpurchase <- chisq.test(edu.filmpurchase)
```

```
## Warning in chisq.test(edu.filmpurchase): Chi-squared approximation may be
## incorrect
```

```
chi.edu.filmpurchase.sim <- chisq.test(edu.filmpurchase, simulate.p.value =
TRUE)
chi.edu.filmpurchase.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data:  edu.filmpurchase
## X-squared = 14.176, df = NA, p-value = 0.913
```

```
chi.edu.filmreuse <- chisq.test(edu.filmreuse)
```

```
## Warning in chisq.test(edu.filmreuse): Chi-squared approximation may be incorrect
```

```
chi.edu.filmreuse.sim <- chisq.test(edu.filmreuse, simulate.p.value = TRUE)
chi.edu.filmreuse.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data:  edu.filmreuse
## X-squared = 38.951, df = NA, p-value = 0.007996
```

```
chi.edu.filmdisp <- chisq.test(edu.filmdisp)
```

```
## Warning in chisq.test(edu.filmdisp): Chi-squared approximation may be incorrect
```

```
chi.edu.filmdisp.sim <- chisq.test(edu.filmdisp, simulate.p.value = TRUE)
chi.edu.filmdisp.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data:  edu.filmdisp
## X-squared = 70.19, df = NA, p-value = 0.05047
```

```
chi.edu.bagpurchase <- chisq.test(edu.bagpurchase)
```

```
## Warning in chisq.test(edu.bagpurchase): Chi-squared approximation may be  
## incorrect
```

```
chi.edu.bagpurchase.sim <- chisq.test(edu.bagpurchase, simulate.p.value =  
TRUE)  
chi.edu.bagpurchase.sim
```

```
##  
## Pearson's Chi-squared test with simulated p-value (based on 2000  
## replicates)  
##  
## data: edu.bagpurchase  
## X-squared = 17.299, df = NA, p-value = 0.7381
```

```
chi.edu.bagreuse <- chisq.test(edu.bagreuse)
```

```
## Warning in chisq.test(edu.bagreuse): Chi-squared approximation may be incorrect
```

```
chi.edu.bagreuse.sim <- chisq.test(edu.bagreuse, simulate.p.value = TRUE)  
chi.edu.bagreuse.sim
```

```
##  
## Pearson's Chi-squared test with simulated p-value (based on 2000  
## replicates)  
##  
## data: edu.bagreuse  
## X-squared = 7.7961, df = NA, p-value = 0.965
```

```
chi.edu.bagdisp <- chisq.test(edu.bagdisp)
```

```
## Warning in chisq.test(edu.bagdisp): Chi-squared approximation may be incorrect
```

```
chi.edu.bagdisp.sim <- chisq.test(edu.bagdisp, simulate.p.value = TRUE)  
chi.edu.bagdisp.sim
```

```
##  
## Pearson's Chi-squared test with simulated p-value (based on 2000  
## replicates)  
##  
## data: edu.bagdisp  
## X-squared = 37.543, df = NA, p-value = 0.2319
```

Simulated residuals for 'education'

```
chi.edu.choice.sim$residuals
```

```
##
##           Always As often as they can If cheaper or preferred
## Primary      1.60556099      -0.03922323      -0.76157731
## Secondary    -1.24404543      -0.06195340      0.54112429
## High school  -1.53885029      -0.07297564      0.86318760
## Undergraduate 1.89712258      0.09548198      -1.14272087
## Postgraduate 0.91414013      0.06471502      -0.13617658
##
##           Rarely or never
## Primary      -0.38729833
## Secondary     0.63954720
## High school   0.40032038
## Undergraduate -0.35355339
## Postgraduate -1.03458705
```

```
chi.edu.barrier.sim$residuals
```

```
##
##           Council collection Unclear information Difficult transport
## Primary      0.5604734024      -0.5567764363      -0.3937003937
## Secondary    -1.1148748756      1.2804644828      -0.1887442091
## High school  -0.0613395615      0.6349029351      -0.6537257224
## Undergraduate 0.8326688172      -1.5138646376      1.0936508958
## Postgraduate 0.2020427085      -0.2455335789      -0.4729606287
##
##           No local facilities      No support Ends up in landfills
## Primary      1.9721272054      -0.3000000000      -0.4062019202
## Secondary     0.1759154470      -1.6106194692      -0.0008837454
## High school  -1.0006865775      -0.3514317480      -0.5267329043
## Undergraduate 0.9274260335      0.7810117950      0.5580876639
## Postgraduate -0.6479515953      1.8699045991      0.0174077656
##
##           Forgetting Recycling a hassle Household disagrees
## Primary      -0.3535533906      -0.2236067977      -0.1581138830
## Secondary    -0.4315221202      0.3692427470      -1.1011357773
## High school  -0.0438529010      -0.1386750491      0.2941742027
## Undergraduate -0.1506160190      -0.2041241452      0.2405626122
## Postgraduate 1.1666666667      0.1054092553      0.8198915917
##
##           Recycling not important      Other Already doing everything
## Primary      -0.1581138830      -0.1414213562      -0.5338539126
## Secondary    -0.1929825589      0.0304603850      1.6615731084
## High school  -0.4902903378      1.4909986328      1.0397140944
## Undergraduate -0.5292377468      -1.1618950039      -1.4221199936
## Postgraduate 2.3106035767      -0.6000000000      -1.8234395449
```

```
chi.edu.barrier2.sim$residuals
```

```
##
##           Limited alternatives No SUP-free alternatives
## Primary      2.31060358      -0.65192024
## Secondary     0.03745941      -1.67672551
## High school   1.06317538      0.26160832
```

##	Undergraduate	-1.33814717	0.43175303	
##	Postgraduate	-0.03513642	1.57274582	
##				
##		Alternatives expensive	Limited functioning	Forgetting reusables
##	Primary	-0.65192024	-0.44158804	-0.44721360
##	Secondary	0.30561007	-0.79910777	0.09632419
##	High school	-0.87995526	-0.18959627	0.83205029
##	Undergraduate	0.99186506	0.78210791	-0.13608276
##	Postgraduate	-0.59655876	0.26154265	-1.37032032
##				
##		Reducing not important	Other No barriers	
##	Primary	-0.25495098	-0.20000000	-0.44721360
##	Secondary	1.04053549	0.76103565	1.70172744
##	High school	-1.08247197	-0.99227788	-0.27735010
##	Undergraduate	-0.66240626	0.79115481	-0.68041382
##	Postgraduate	1.69183560	-0.84852814	-0.84327404

chi.edu.mainconsid.sim\$residuals

##					
##		Value for money	Price	Quality Deals/discounts	
##	Primary	-0.77136243	-0.69641941	-0.66332496	-0.36055513
##	Secondary	-0.34577968	0.71701031	-0.72301825	0.27678481
##	High school	0.21305941	-0.44971134	0.26178516	-0.49881516
##	Undergraduate	0.13215221	0.22065239	-0.31193973	0.41353524
##	Postgraduate	0.08861419	-0.58551629	1.44976487	-0.22226495
##					
##		Use-by-dates/longevity	Convenience	Ease of recycling packaging	
##	Primary	3.51506960	-0.22360680	-0.33166248	
##	Secondary	-0.75710187	0.36924275	0.28790846	
##	High school	1.14857772	-0.13867505	1.06583957	
##	Undergraduate	-0.79357539	0.34020691	-0.88994571	
##	Postgraduate	-0.23162641	-0.94868330	-0.69645567	
##					
##		Sustainability	Brand	Ethics	Other
##	Primary	3.66737173	-0.14142136	-0.15811388	-0.10000000
##	Secondary	-0.64910266	1.04580655	-0.19298256	2.17541322
##	High school	-1.56897622	-0.26311741	0.29417420	-0.80622577
##	Undergraduate	1.72464332	-0.30123204	-0.52923775	-0.82158384
##	Postgraduate	-0.15716506	-0.60000000	0.81989159	-0.42426407

chi.edu.litter.sim\$residuals

##			
##		Strongly agree	Agree Neither agree nor disagree
##	Primary	-0.930053762	1.322222222
##	Secondary	0.007333557	-0.364563198
##	High school	0.103356304	0.186052102
##	Undergraduate	-0.312452094	0.043953045
##	Postgraduate	0.615831596	-0.151897012
##			
##		Disagree Strongly disagree	
##	Primary	-0.200000000	-0.141421356

```
## Secondary -0.674880669 -0.984885780
## High school -0.372104204 -0.263117406
## Undergraduate 1.399735425 1.420093894
## Postgraduate -0.848528137 -0.600000000
```

```
chi.edu.attitude.sim$residuals
```

```
##
## 1 (Not concerned) 2 3 4
## Primary -0.36742346 -0.31622777 1.75586126 -0.60415230
## Secondary 0.95845397 1.43034132 -0.93318698 -0.64231550
## High school -0.59920413 -2.15727749 1.55464866 0.87767355
## Undergraduate -0.36853713 1.25092558 0.04368422 0.07303141
## Postgraduate 0.36565517 -0.59628479 -1.92093727 -0.61251534
##
## 5 6 7 (Very concerned)
## Primary -0.75498344 1.36067210 -0.58736701
## Secondary -0.50305721 -0.42875303 1.04326134
## High school 0.48464966 -0.51568795 -0.72325984
## Undergraduate -0.39901194 -0.20701967 0.14764659
## Postgraduate 0.85541504 1.76392420 -0.48555627
```

```
chi.edu.ocean.sim$residuals
```

```
##
## Always Most of the time Sometimes Rarely Never
## Primary -0.3082207 0.6656402 0.0000000 -0.5477226 -0.2915476
## Secondary 0.1828551 -1.0394365 0.2153874 0.3801338 0.9246974
## High school 0.7344198 -0.4816146 0.8682431 -0.5661385 -1.4996606
## Undergraduate -0.5577952 0.9958604 -0.6694387 0.1666667 0.1095893
## Postgraduate -0.5429506 0.5360508 -0.7071068 0.2581989 1.1884246
```

```
chi.edu.actions.sim$residuals
```

```
##
## Yes, definitely Yes, probably No, probably not
## Primary 1.530948339 -0.977241014 -0.463680925
## Secondary -0.755776842 -0.046652097 1.416001179
## High school -0.169282470 -0.009519254 0.274187693
## Undergraduate 1.021987028 -0.306706279 -0.922030350
## Postgraduate -0.777641392 0.918939749 -0.950574422
##
## No, definitely not I don't know
## Primary -0.234520788 -0.254950976
## Secondary -0.408694747 0.477322778
## High school 0.753662387 -0.595967713
## Undergraduate -0.888786295 0.292413574
## Postgraduate 1.015088193 -0.157165056
```

```
chi.edu.attplast.sim$residuals
```

```

##
## Will go out of their way to avoid
## Primary -0.71414284
## Secondary -1.55526486
## High school 0.32131423
## Undergraduate 0.26843775
## Postgraduate 1.59083705
##
## If option is readily available, will avoid
## Primary 0.87162192
## Secondary 0.15610318
## High school 0.01782056
## Undergraduate 0.28271354
## Postgraduate -1.04301961
##
## Will avoid only without extra costs Not a priority
## Primary -0.53851648 -0.33166248
## Secondary 1.31588304 0.72085352
## High school -0.65643115 0.31788198
## Undergraduate -0.58200451 -0.52295779
## Postgraduate 0.34139673 -0.69645567

```

```
chi.edu.zerow.sim$residuals
```

```

##
## Yes, shops regularly Yes, shops occasionally
## Primary 3.51506960 -0.38729833
## Secondary -0.21437651 -1.21421280
## High school -0.72665121 -0.88070485
## Undergraduate -0.33353169 1.21779501
## Postgraduate 1.55011520 1.39973542
##
## Yes, visited at least once Yes, never visited
## Primary -0.34641016 -0.66332496
## Secondary -1.16892761 -0.93949078
## High school 0.07161149 0.07479576
## Undergraduate 0.31622777 1.52299988
## Postgraduate 1.25196142 -1.39291135
##
## No, but would like to shop there No, not likely to shop there
## Primary 0.13363062 -0.58736701
## Secondary 0.85387663 1.28772797
## High school 0.41437097 0.12142318
## Undergraduate -1.04909258 -0.88846986
## Postgraduate -0.18898224 -0.48555627

```

```
chi.edu.bottpurchase.sim$residuals
```

```

##
## None 1-2 3-5 6-10 11-15
## Primary -0.24494897 -0.82764727 0.40315917 1.03571362 -0.30822070
## Secondary -0.53345145 0.48187890 -0.61311072 0.72117304 0.64872783
## High school 0.55700665 -0.07867873 0.06818965 -0.41801929 -0.07042382

```

```
## Undergraduate -0.52174919 -0.03492741 0.56134217 -0.39519765 -0.16289594
## Postgraduate 0.88527041 -0.37876523 -0.30523351 0.13174732 -0.54295057
##
## 16+ I don't know
## Primary -0.26457513 -0.22360680
## Secondary -1.29982722 -0.27291855
## High school -0.72665121 1.52542554
## Undergraduate 0.58655573 -0.74845520
## Postgraduate 2.44098601 -0.94868330
```

```
chi.edu.bottreuse.sim$residuals
```

```
##
## Never Once 2-4 times 5-10 times More often
## Primary 1.08254395 -0.57445626 0.44202669 -0.53385391 -0.62048368
## Secondary 1.39357580 0.49867209 -1.48084880 1.66157311 -1.31272353
## High school -0.01561315 0.11875422 -0.45174082 -0.12197763 0.59470272
## Undergraduate -1.01375838 -0.27014773 1.43408254 -0.96612961 0.19861534
## Postgraduate -0.54987550 -0.38568667 0.40794225 -0.49890719 0.78632798
```

```
chi.edu.bottdisp.sim$residuals
```

```
##
## General waste bin Recycling bin Recycling centre
## Primary -0.36742346 -0.49975604 -0.22360680
## Secondary 0.17684013 0.72433542 -0.91507985
## High school -0.26162434 -0.15496777 -0.13867505
## Undergraduate -0.03726780 -0.25661968 0.88453796
## Postgraduate 0.36565517 -0.27975987 0.10540926
##
## Specialist waste collection Landfill Deposit return scheme
## Primary -0.18708287 -0.15811388 6.92964646
## Secondary -0.53535187 -0.19298256 -0.98488578
## High school -0.18232322 -1.27475488 0.61394061
## Undergraduate -0.23584252 1.78016333 -0.30123204
## Postgraduate 1.72603776 -0.67082039 -0.60000000
##
## Indefinite storage Other I don't know
## Primary -0.28284271 -0.10000000 -0.07071068
## Secondary -1.96977156 -0.69641941 1.53824944
## High school 1.66641024 0.43412157 -0.57008771
## Undergraduate -0.17213259 0.39557740 -0.58094750
## Postgraduate 0.46666667 -0.42426407 -0.30000000
```

```
chi.edu.tubspurchase.sim$residuals
```

```
##
## None 1-2 3-5 6-10 11-15
## Primary -0.24494897 -0.73484692 1.51967286 -0.65192024 -0.38078866
## Secondary 1.22517970 0.35368026 1.07365549 -1.89698502 0.36483467
## High school 0.05063697 -0.01687899 -0.50973577 0.83239011 0.18729542
## Undergraduate -0.52174919 0.25673373 -0.75750796 0.24504901 -0.25171823
```

```
## Postgraduate -1.03923048 -0.87244041 0.31498449 1.21119506 -0.37758052
##
## 16+ I don't know
## Primary -0.25495098 -0.22360680
## Secondary -1.21231537 -0.27291855
## High school -1.08247197 0.41602515
## Undergraduate 1.72464332 0.34020691
## Postgraduate 0.76733527 -0.94868330
```

```
chi.edu.tubsreuse.sim$residuals
```

```
##
## Never Once 2-4 times 5-10 times More often
## Primary -0.55226805 -0.45276926 0.73949690 -0.53851648 0.33704807
## Secondary 0.83396126 1.28679904 0.09845361 -0.01733179 -1.30375484
## High school -1.75742884 -0.08903274 0.08459916 -0.42610443 1.39718941
## Undergraduate 1.63366461 -1.30044551 0.04587822 -0.35598334 -0.18172994
## Postgraduate -1.06270610 0.68195876 -0.58551629 1.65446105 -0.24251018
```

```
chi.edu.tubdisp.sim$residuals
```

```
##
## General waste bin Recycling bin Recycling centre
## Primary -0.65574385 0.92003760 -0.38078866
## Secondary 0.68867696 0.53577823 -1.52061582
## High school -1.12544962 -0.06943604 -0.13843575
## Undergraduate 0.73782101 -0.38068435 0.70720837
## Postgraduate -0.26598751 -0.22718137 1.47937286
##
## Specialist waste collection Landfill Deposit return scheme
## Primary -0.24494897 -0.12247449 -0.14142136
## Secondary 0.05275893 0.31948466 -0.98488578
## High school 0.55700665 -0.98742088 0.61394061
## Undergraduate -0.52174919 -0.01242260 0.55943093
## Postgraduate -0.07698004 1.40488566 -0.60000000
##
## Indefinite storage Other I don't know
## Primary -0.45825757 -0.18708287 -0.17320508
## Secondary -0.37131102 0.23217769 -1.20623381
## High school 1.44806300 -1.50831031 2.18415037
## Undergraduate -1.10890654 1.71595763 -0.72029658
## Postgraduate 0.11315579 -0.79372539 -0.73484692
```

```
chi.edu.filmpurchase.sim$residuals
```

```
##
## None 1-2 3-5 6-10 11-15
## Primary -0.24494897 0.89495943 -0.78102497 0.57871539 -0.44158804
## Secondary 0.05275893 -0.08197968 -0.10755239 0.68723570 0.17640527
## High school 0.55700665 0.32536258 -0.57965725 0.21039203 0.09128709
## Undergraduate -0.02484520 0.12207784 -0.02727227 -0.18419392 -0.59605581
## Postgraduate -1.03923048 -0.93106300 1.51496482 -1.30760201 0.79530316
```

```
##
##          16+ I don't know
## Primary      -0.30000000 -0.24494897
## Secondary    -1.13198070 -0.53345145
## High school  -0.35143175  0.05063697
## Undergraduate 0.78101179  0.47205880
## Postgraduate 1.08423040 -0.07698004
```

```
chi.edu.filmreuse.sim$residuals
```

```
##
##          Never      Once    2-4 times  5-10 times
## Primary      -1.086278049 -0.644204936  1.404885655 -0.244948974
## Secondary     0.630531091 -0.028419424 -1.407963632  1.811390080
## High school   0.833537567  0.004813481 -1.086107559 -0.962102399
## Undergraduate -1.081270671  0.375518383  0.884266531 -0.024845200
## Postgraduate -0.269057083 -0.537844874  2.331551348 -1.039230485
##
##          More often
## Primary      3.377622438
## Secondary    -1.382900607
## High school  -0.396296962
## Undergraduate 1.750000000
## Postgraduate -1.161895004
```

```
chi.edu.filmdisp.sim$residuals
```

```
##
##          General waste bin Recycling bin Recycling centre
## Primary      -1.15108644  0.79618656  -0.29154759
## Secondary     0.84046565 -0.91248868  -0.06033312
## High school   0.30979416  0.74980488  -1.92509622
## Undergraduate -0.46922219 -0.54735493  2.19700355
## Postgraduate -0.78834540  0.94526534  -0.42847960
##
##          Specialist waste collection  Landfill Deposit return scheme
## Primary      -0.17320508 -0.12247449  -0.10000000
## Secondary    -1.20623381 -0.85293611  -0.69641941
## High school   0.03580574 -0.98742088  0.43412157
## Undergraduate 0.68516016 -0.01242260  0.39557740
## Postgraduate 0.62598071  3.32938655  -0.42426407
##
##          Indefinite storage      Other I don't know
## Primary      -0.12247449  5.60029761 -0.17320508
## Secondary    -0.85293611 -0.37720714  1.28084621
## High school   0.02531848 -1.39642400  0.03580574
## Undergraduate 0.98138539  0.68516016 -0.72029658
## Postgraduate -0.51961524  0.62598071 -0.73484692
```

```
chi.edu.bagpurchase.sim$residuals
```

```
##
```

```
##           None      1-2      3-5      6-10      11-15
## Primary      -0.14855627 -0.62048368 1.69297454 -0.30822070 -0.26457513
## Secondary    -0.43462803 -0.15562919 1.41600118 -0.74889048 0.87107419
## High school   0.29942474 -0.60469773 0.27418769 -0.07042382 -0.25784398
## Undergraduate 0.07910741 1.17943181 -1.97202932 0.23200331 -0.33353169
## Postgraduate 0.02626129 -0.73314638 0.57441128 0.98648766 -0.23162641
##
##           16+ I don't know
## Primary      -0.20000000 -0.18708287
## Secondary    -0.67488067 0.23217769
## High school   -0.37210420 0.48067032
## Undergraduate 0.79115481 -0.23584252
## Postgraduate 0.32998316 -0.79372539
```

```
chi.edu.bagreuse.sim$residuals
```

```
##
##           Never      Once      2-4 times      5-10 times      More often
## Primary      -0.39370039 -0.46904158 0.78456207 -0.59160798 0.21111111
## Secondary     1.27014823 0.40716406 0.30480440 0.24878201 -1.16229449
## High school   -0.02362864 -0.34377583 -0.22281937 -0.36689969 0.59950122
## Undergraduate -0.76130469 0.29842460 -0.06916611 0.48862727 -0.09128709
## Postgraduate -0.47296063 -0.48241815 -0.12789071 -0.51793240 0.89566859
```

```
chi.edu.bagdisp.sim$residuals
```

```
##
##           General waste bin Recycling bin Recycling centre
## Primary      0.33704807 0.79618656 -0.38078866
## Secondary     1.41328553 -0.27734575 -0.76643563
## High school   0.22369699 0.20116716 -1.11562926
## Undergraduate -1.62117500 0.34994824 1.34649277
## Postgraduate 0.31498449 -0.79235477 0.86038840
##
##           Specialist waste collection      Landfill Deposit return scheme
## Primary      -0.20000000 -0.10000000 -0.23452079
## Secondary     0.04307749 -0.69641941 -1.02097152
## High school   0.24806947 -0.80622577 -0.30410938
## Undergraduate 0.18257419 0.39557740 1.18721089
## Postgraduate -0.84852814 1.93275854 0.01005038
##
##           Indefinite storage      Other I don't know
## Primary      -0.64420494 -0.33911650 -0.21213203
## Secondary     0.19447802 -1.93824451 0.55336366
## High school   0.77497048 -1.27101071 0.62855825
## Undergraduate -0.94706209 2.95661395 -0.59529188
## Postgraduate 0.19391686 -0.04865336 -0.90000000
```

Simulated observed and expected values for 'education'

```
chi.edu.choice.sim$observed
```

```
##
##           Always As often as they can If cheaper or preferred
## Primary           1           1           0
## Secondary         7           50          31
## High school       9           67          43
## Undergraduate    23           71          32
## Postgraduate      6           19          10
##
##           Rarely or never
## Primary           0
## Secondary          9
## High school       11
## Undergraduate      9
## Postgraduate       1
```

```
chi.edu.choice.sim$expected
```

```
##
##           Always As often as they can If cheaper or preferred
## Primary           0.230           1.04           0.58
## Secondary        11.155           50.44          28.13
## High school      14.950           67.60          37.70
## Undergraduate    15.525           70.20          39.15
## Postgraduate      4.140           18.72          10.44
##
##           Rarely or never
## Primary           0.150
## Secondary          7.275
## High school        9.750
## Undergraduate     10.125
## Postgraduate       2.700
```

```
chi.edu.barrier.sim$observed
```

```
##
##           Council collection Unclear information Difficult transport
## Primary           1           0           0
## Secondary         22           20           7
## High school       37           23           8
## Undergraduate     44           14          14
## Postgraduate      11           5           2
##
##           No local facilities No support Ends up in landfills Forgetting
## Primary           1           0           0           0
## Secondary          9           1           8           5
## High school        8           5           9           8
## Undergraduate     15           8          13           8
## Postgraduate       2           4           3           4
##
##           Recycling a hassle Household disagrees Recycling not important
## Primary           0           0           0
## Secondary          3           0           1
## High school        3           2           1
```

##	Undergraduate	3	2	1
##	Postgraduate	1	1	2
##				
##	Other Already doing everything			
##	Primary	0	0	
##	Secondary	1	20	
##	High school	3	23	
##	Undergraduate	0	13	
##	Postgraduate	0	1	

chi.edu.barrier.sim\$expected

##				
##	Council collection Unclear information Difficult transport			
##	Primary	0.5750	0.310	0.1550
##	Secondary	27.8875	15.035	7.5175
##	High school	37.3750	20.150	10.0750
##	Undergraduate	38.8125	20.925	10.4625
##	Postgraduate	10.3500	5.580	2.7900
##				
##	No local facilities No support Ends up in landfills Forgetting			
##	Primary	0.1750	0.090	0.1650 0.1250
##	Secondary	8.4875	4.365	8.0025 6.0625
##	High school	11.3750	5.850	10.7250 8.1250
##	Undergraduate	11.8125	6.075	11.1375 8.4375
##	Postgraduate	3.1500	1.620	2.9700 2.2500
##				
##	Recycling a hassle Household disagrees Recycling not important			
##	Primary	0.050	0.0250	0.0250
##	Secondary	2.425	1.2125	1.2125
##	High school	3.250	1.6250	1.6250
##	Undergraduate	3.375	1.6875	1.6875
##	Postgraduate	0.900	0.4500	0.4500
##				
##	Other Already doing everything			
##	Primary	0.02	0.2850	
##	Secondary	0.97	13.8225	
##	High school	1.30	18.5250	
##	Undergraduate	1.35	19.2375	
##	Postgraduate	0.36	5.1300	

chi.edu.barrier2.sim\$observed

##			
##	Limited alternatives No SUP-free alternatives		
##	Primary	2	0
##	Secondary	22	13
##	High school	35	29
##	Undergraduate	23	31
##	Postgraduate	8	12
##			
##	Alternatives expensive Limited functioning Forgetting reusables		
##	Primary	0	0 0

##	Secondary	22	7	10
##	High school	23	12	16
##	Undergraduate	34	16	13
##	Postgraduate	6	4	1
##				
##	Reducing not important	Other	No barriers	
##	Primary	0	0	0
##	Secondary	5	3	15
##	High school	2	1	12
##	Undergraduate	3	4	11
##	Postgraduate	3	0	2

```
chi.edu.barrier2.sim$expected
```

##				
##	Limited alternatives	No SUP-free alternatives		
##	Primary	0.450	0.4250	
##	Secondary	21.825	20.6125	
##	High school	29.250	27.6250	
##	Undergraduate	30.375	28.6875	
##	Postgraduate	8.100	7.6500	
##				
##	Alternatives expensive	Limited functioning	Forgetting reusables	
##	Primary	0.4250	0.1950	0.2
##	Secondary	20.6125	9.4575	9.7
##	High school	27.6250	12.6750	13.0
##	Undergraduate	28.6875	13.1625	13.5
##	Postgraduate	7.6500	3.5100	3.6
##				
##	Reducing not important	Other	No barriers	
##	Primary	0.0650	0.04	0.2
##	Secondary	3.1525	1.94	9.7
##	High school	4.2250	2.60	13.0
##	Undergraduate	4.3875	2.70	13.5
##	Postgraduate	1.1700	0.72	3.6

```
chi.edu.mainconsid.sim$observed
```

##				
##	Value for money	Price	Quality	Deals/discounts
##	Primary	0	0	0
##	Secondary	27	27	18
##	High school	40	29	30
##	Undergraduate	41	34	28
##	Postgraduate	11	7	12
##				
##	Use-by-dates/longevity	Convenience	Ease of recycling	packaging
##	Primary	1	0	0
##	Secondary	2	3	6
##	High school	7	3	10
##	Undergraduate	3	4	5
##	Postgraduate	1	0	1
##				

```
##
##      Sustainability Brand Ethics Other
## Primary              1      0      0      0
## Secondary            2      2      1      2
## High school          1      1      2      0
## Undergraduate        8      1      1      0
## Postgraduate         1      0      1      0
```

```
chi.edu.mainconsid.sim$expected
```

```
##
##      Value for money Price Quality Deals/discounts
## Primary          0.5950 0.4850    0.44      0.130
## Secondary        28.8575 23.5225   21.34      6.305
## High school      38.6750 31.5250   28.60      8.450
## Undergraduate    40.1625 32.7375   29.70      8.775
## Postgraduate     10.7100  8.7300    7.92      2.340
##
##      Use-by-dates/longevity Convenience Ease of recycling packaging
## Primary              0.070      0.050      0.110
## Secondary            3.395      2.425      5.335
## High school          4.550      3.250      7.150
## Undergraduate        4.725      3.375      7.425
## Postgraduate         1.260      0.900      1.980
##
##      Sustainability Brand Ethics Other
## Primary          0.0650 0.02 0.0250 0.010
## Secondary        3.1525 0.97 1.2125 0.485
## High school      4.2250 1.30 1.6250 0.650
## Undergraduate    4.3875 1.35 1.6875 0.675
## Postgraduate     1.1700 0.36 0.4500 0.180
```

```
chi.edu.litter.sim$observed
```

```
##
##      Strongly agree Agree Neither agree nor disagree Disagree
## Primary              0      2              0      0
## Secondary            42      37              17      1
## High school          57      54              16      2
## Undergraduate        56      55              16      5
## Postgraduate         18      14              4      0
##
##      Strongly disagree
## Primary              0
## Secondary            0
## High school          1
## Undergraduate        3
## Postgraduate         0
```

```
chi.edu.litter.sim$expected
```

```
##
##      Strongly agree Agree Neither agree nor disagree Disagree
```

```
##      Primary      0.8650  0.810      0.2650  0.04
##      Secondary    41.9525 39.285      12.8525  1.94
##      High school   56.2250 52.650      17.2250  2.60
##      Undergraduate 58.3875 54.675      17.8875  2.70
##      Postgraduate  15.5700 14.580      4.7700  0.72
##
##      Strongly disagree
##      Primary      0.02
##      Secondary    0.97
##      High school   1.30
##      Undergraduate 1.35
##      Postgraduate  0.36
```

```
chi.edu.attitude.sim$observed
```

```
##
##      1 (Not concerned)  2  3  4  5  6  7 (Very concerned)
##      Primary           0  0  1  0  0  1           0
##      Secondary         9  8  7 15 25 12           21
##      High school       7  1 19 28 40 16           19
##      Undergraduate     8 10 14 25 36 18           24
##      Postgraduate      3  1  0  5 13  9           5
```

```
chi.edu.attitude.sim$expected
```

```
##
##      1 (Not concerned)      2      3      4      5      6
##      Primary               0.1350 0.10  0.2050  0.3650  0.570  0.28
##      Secondary             6.5475 4.85  9.9425 17.7025 27.645 13.58
##      High school           8.7750 6.50 13.3250 23.7250 37.050 18.20
##      Undergraduate         9.1125 6.75 13.8375 24.6375 38.475 18.90
##      Postgraduate          2.4300 1.80  3.6900  6.5700 10.260  5.04
##
##      7 (Very concerned)
##      Primary               0.3450
##      Secondary             16.7325
##      High school           22.4250
##      Undergraduate         23.2875
##      Postgraduate          6.2100
```

```
chi.edu.ocean.sim$observed
```

```
##
##      Always Most of the time Sometimes Rarely Never
##      Primary      0           1           1           0           0
##      Secondary     5          20          50          16          6
##      High school    8          31          72          17          2
##      Undergraduate  5          41          62          21          6
##      Postgraduate  1          11          15           6          3
```

```
chi.edu.ocean.sim$expected
```

```
##
##           Always Most of the time Sometimes Rarely Never
## Primary      0.0950           0.52         1.0  0.30 0.0850
## Secondary    4.6075           25.22        48.5 14.55 4.1225
## High school   6.1750           33.80        65.0 19.50 5.5250
## Undergraduate 6.4125           35.10        67.5 20.25 5.7375
## Postgraduate  1.7100           9.36         18.0  5.40 1.5300
```

```
chi.edu.actions.sim$observed
```

```
##
##           Yes, definitely Yes, probably No, probably not
## Primary           2           0           0
## Secondary         30          46          15
## High school       45          62          15
## Undergraduate     55          62          11
## Postgraduate      10          21           2
##
##           No, definitely not I don't know
## Primary           0           0
## Secondary         2           4
## High school       5           3
## Undergraduate     2           5
## Postgraduate      2           1
```

```
chi.edu.actions.sim$expected
```

```
##
##           Yes, definitely Yes, probably No, probably not
## Primary           0.710         0.9550         0.2150
## Secondary        34.435         46.3175        10.4275
## High school      46.150         62.0750        13.9750
## Undergraduate    47.925         64.4625        14.5125
## Postgraduate     12.780         17.1900         3.8700
##
##           No, definitely not I don't know
## Primary           0.0550         0.0650
## Secondary         2.6675         3.1525
## High school       3.5750         4.2250
## Undergraduate     3.7125         4.3875
## Postgraduate      0.9900         1.1700
```

```
chi.edu.attplast.sim$observed
```

```
##
##           Will go out of their way to avoid
## Primary           0
## Secondary         17
## High school       35
```

##	Undergraduate	36	
##	Postgraduate	14	
##			
##	If option is readily available, will avoid		
##	Primary	2	
##	Secondary	54	
##	High school	71	
##	Undergraduate	76	
##	Postgraduate	15	
##			
##	Will avoid only without extra costs		Not a priority
##	Primary	0	0
##	Secondary	19	7
##	High school	16	8
##	Undergraduate	17	6
##	Postgraduate	6	1

chi.edu.attplast.sim\$expected

##			
##	Will go out of their way to avoid		
##	Primary	0.510	
##	Secondary	24.735	
##	High school	33.150	
##	Undergraduate	34.425	
##	Postgraduate	9.180	
##			
##	If option is readily available, will avoid		
##	Primary	1.090	
##	Secondary	52.865	
##	High school	70.850	
##	Undergraduate	73.575	
##	Postgraduate	19.620	
##			
##	Will avoid only without extra costs		Not a priority
##	Primary	0.290	0.110
##	Secondary	14.065	5.335
##	High school	18.850	7.150
##	Undergraduate	19.575	7.425
##	Postgraduate	5.220	1.980

chi.edu.zerow.sim\$observed

##			
##	Yes, shops regularly	Yes, shops occasionally	
##	Primary	1	0
##	Secondary	3	4
##	High school	3	7
##	Undergraduate	4	14
##	Postgraduate	3	5
##			
##	Yes, visited at least once	Yes, never visited	
##	Primary	0	0

##	Secondary	3	17
##	High school	8	29
##	Undergraduate	9	38
##	Postgraduate	4	4
##			
##		No, but would like to shop there	No, not likely to shop there
##	Primary	1	0
##	Secondary	48	22
##	High school	60	23
##	Undergraduate	51	19
##	Postgraduate	15	5

chi.edu.zerow.sim\$expected

##			
##		Yes, shops regularly	Yes, shops occasionally
##	Primary	0.070	0.150
##	Secondary	3.395	7.275
##	High school	4.550	9.750
##	Undergraduate	4.725	10.125
##	Postgraduate	1.260	2.700
##			
##		Yes, visited at least once	Yes, never visited
##	Primary	0.12	0.44
##	Secondary	5.82	21.34
##	High school	7.80	28.60
##	Undergraduate	8.10	29.70
##	Postgraduate	2.16	7.92
##			
##		No, but would like to shop there	No, not likely to shop there
##	Primary	0.8750	0.3450
##	Secondary	42.4375	16.7325
##	High school	56.8750	22.4250
##	Undergraduate	59.0625	23.2875
##	Postgraduate	15.7500	6.2100

chi.edu.bottpurchase.sim\$observed

##								
##		None	1-2	3-5	6-10	11-15	16+	I don't know
##	Primary	0	0	1	1	0	0	0
##	Secondary	2	36	29	21	6	1	2
##	High school	5	44	44	22	6	3	6
##	Undergraduate	3	46	49	23	6	6	2
##	Postgraduate	2	11	11	7	1	4	0

chi.edu.bottpurchase.sim\$expected

##								
##		None	1-2	3-5	6-10	11-15	16+	I don't know
##	Primary	0.06	0.6850	0.670	0.370	0.0950	0.070	0.050
##	Secondary	2.91	33.2225	32.495	17.945	4.6075	3.395	2.425

##	High school	3.90	44.5250	43.550	24.050	6.1750	4.550	3.250
##	Undergraduate	4.05	46.2375	45.225	24.975	6.4125	4.725	3.375
##	Postgraduate	1.08	12.3300	12.060	6.660	1.7100	1.260	0.900

```
chi.edu.bottreuse.sim$observed
```

##		Never	Once	2-4 times	5-10 times	More often
##	Primary	1	0	1	0	0
##	Secondary	23	18	23	20	13
##	High school	23	22	39	18	28
##	Undergraduate	19	21	53	15	27
##	Postgraduate	5	5	13	4	9

```
chi.edu.bottreuse.sim$expected
```

##		Never	Once	2-4 times	5-10 times	More often
##	Primary	0.3550	0.330	0.6450	0.2850	0.3850
##	Secondary	17.2175	16.005	31.2825	13.8225	18.6725
##	High school	23.0750	21.450	41.9250	18.5250	25.0250
##	Undergraduate	23.9625	22.275	43.5375	19.2375	25.9875
##	Postgraduate	6.3900	5.940	11.6100	5.1300	6.9300

```
chi.edu.bottdisp.sim$observed
```

##		General waste bin	Recycling bin	Recycling centre
##	Primary	0	1	0
##	Secondary	7	86	1
##	High school	8	105	3
##	Undergraduate	9	108	5
##	Postgraduate	3	28	1
##		Specialist waste collection	Landfill	Deposit return scheme
##	Primary	0	0	1
##	Secondary	1	1	0
##	High school	2	0	2
##	Undergraduate	2	4	1
##	Postgraduate	2	0	0
##		Indefinite storage	Other	I don't know
##	Primary	0	0	0
##	Secondary	0	0	1
##	High school	9	1	0
##	Undergraduate	5	1	0
##	Postgraduate	2	0	0

```
chi.edu.bottdisp.sim$expected
```

```
##
```

```
##          General waste bin Recycling bin Recycling centre
## Primary          0.1350          1.64          0.050
## Secondary        6.5475          79.54          2.425
## High school      8.7750          106.60          3.250
## Undergraduate    9.1125          110.70          3.375
## Postgraduate     2.4300          29.52          0.900
##
##          Specialist waste collection Landfill Deposit return scheme
## Primary          0.0350  0.0250          0.02
## Secondary        1.6975  1.2125          0.97
## High school      2.2750  1.6250          1.30
## Undergraduate    2.3625  1.6875          1.35
## Postgraduate     0.6300  0.4500          0.36
##
##          Indefinite storage Other I don't know
## Primary          0.08 0.010          0.0050
## Secondary        3.88 0.485          0.2425
## High school      5.20 0.650          0.3250
## Undergraduate    5.40 0.675          0.3375
## Postgraduate     1.44 0.180          0.0900
```

```
chi.edu.tubspurchase.sim$observed
```

```
##
##          None 1-2 3-5 6-10 11-15 16+ I don't know
## Primary          0  0  2   0   0  0          0
## Secondary        5 28 41  12   8  1          2
## High school      4 35 43  32  10  2          4
## Undergraduate    3 38 43  30   9  8          4
## Postgraduate     0  7 14  11   2  2          0
```

```
chi.edu.tubspurchase.sim$expected
```

```
##
##          None 1-2 3-5 6-10 11-15 16+ I don't know
## Primary          0.06 0.54 0.7150 0.4250 0.1450 0.0650          0.050
## Secondary        2.91 26.19 34.6775 20.6125 7.0325 3.1525          2.425
## High school      3.90 35.10 46.4750 27.6250 9.4250 4.2250          3.250
## Undergraduate    4.05 36.45 48.2625 28.6875 9.7875 4.3875          3.375
## Postgraduate     1.08 9.72 12.8700 7.6500 2.6100 1.1700          0.900
```

```
chi.edu.tubsreuse.sim$observed
```

```
##
##          Never Once 2-4 times 5-10 times More often
## Primary          0  0          1          0          1
## Secondary        18 14          24          14          27
## High school      12 13          32          17          56
## Undergraduate    28  9          33          18          47
## Postgraduate     3  5          7          9          12
```

```
chi.edu.tubsreuse.sim$expected
```

```
##
##           Never      Once 2-4 times 5-10 times More often
## Primary      0.3050  0.2050      0.4850      0.290    0.7150
## Secondary    14.7925  9.9425     23.5225     14.065    34.6775
## High school   19.8250 13.3250     31.5250     18.850    46.4750
## Undergraduate 20.5875 13.8375     32.7375     19.575    48.2625
## Postgraduate  5.4900  3.6900      8.7300      5.220    12.8700
```

```
chi.edu.tubdisp.sim$observed
```

```
##
##           General waste bin Recycling bin Recycling centre
## Primary              0              2              0
## Secondary            24             55              3
## High school          22             68              9
## Undergraduate        33             68             12
## Postgraduate         7             18              5
##
##           Specialist waste collection Landfill Deposit return scheme
## Primary              0              0              0
## Secondary            3              1              0
## High school          5              0              2
## Undergraduate        3              1              2
## Postgraduate         1              1              0
##
##           Indefinite storage Other I don't know
## Primary              0              0              0
## Secondary            9              2              0
## High school         19              0              5
## Undergraduate       10              5              1
## Postgraduate         4              0              0
```

```
chi.edu.tubdisp.sim$expected
```

```
##
##           General waste bin Recycling bin Recycling centre
## Primary              0.430      1.0550      0.1450
## Secondary           20.855      51.1675      7.0325
## High school         27.950      68.5750      9.4250
## Undergraduate       29.025      71.2125      9.7875
## Postgraduate        7.740      18.9900      2.6100
##
##           Specialist waste collection Landfill Deposit return scheme
## Primary              0.06      0.0150      0.02
## Secondary            2.91      0.7275      0.97
## High school          3.90      0.9750      1.30
## Undergraduate        4.05      1.0125      1.35
## Postgraduate         1.08      0.2700      0.36
```

```
##               Indefinite storage  Other I don't know
## Primary                0.210 0.0350          0.030
## Secondary              10.185 1.6975          1.455
## High school            13.650 2.2750          1.950
## Undergraduate          14.175 2.3625          2.025
## Postgraduate           3.780 0.6300          0.540
```

```
chi.edu.filmpurchase.sim$observed
```

```
##
##               None 1-2 3-5 6-10 11-15 16+ I don't know
## Primary           0  1  0  1  0  0          0
## Secondary          3 20 29 31 10 2          2
## High school        5 29 36 38 13 5          4
## Undergraduate      4 29 41 37 11 8          5
## Postgraduate       0  5 16  6  5 3          1
```

```
chi.edu.filmpurchase.sim$expected
```

```
##
##               None 1-2 3-5 6-10 11-15 16+ I don't know
## Primary          0.06 0.42 0.610 0.5650 0.1950 0.090          0.06
## Secondary         2.91 20.37 29.585 27.4025 9.4575 4.365          2.91
## High school       3.90 27.30 39.650 36.7250 12.6750 5.850          3.90
## Undergraduate     4.05 28.35 41.175 38.1375 13.1625 6.075          4.05
## Postgraduate      1.08 7.56 10.980 10.1700 3.5100 1.620          1.08
```

```
chi.edu.filmreuse.sim$observed
```

```
##
##               Never Once 2-4 times 5-10 times More often
## Primary          0  0          1          0          1
## Secondary         62 20          8          6          1
## High school       84 27          13         2          4
## Undergraduate     70 30          22         4          9
## Postgraduate      20  6          10         0          0
```

```
chi.edu.filmreuse.sim$expected
```

```
##
##               Never  Once 2-4 times 5-10 times More often
## Primary           1.18 0.4150 0.270 0.06 0.0750
## Secondary          57.23 20.1275 13.095 2.91 3.6375
## High school        76.70 26.9750 17.550 3.90 4.8750
## Undergraduate      79.65 28.0125 18.225 4.05 5.0625
## Postgraduate       21.24 7.4700 4.860 1.08 1.3500
```

```
chi.edu.filmdisp.sim$observed
```

```

##
##      General waste bin Recycling bin Recycling centre
## Primary              0              1              0
## Secondary            71             18             4
## High school          89             34             1
## Undergraduate        85             28            11
## Postgraduate         20             11             1
##
##      Specialist waste collection Landfill Deposit return scheme
## Primary              0              0              0
## Secondary            0              0              0
## High school          2              0              1
## Undergraduate        3              1              1
## Postgraduate         1              2              0
##
##      Indefinite storage Other I don't know
## Primary              0              1              0
## Secondary            0              1              3
## High school          1              0              2
## Undergraduate        2              3              1
## Postgraduate         0              1              0

```

```
chi.edu.filmdisp.sim$expected
```

```

##
##      General waste bin Recycling bin Recycling centre
## Primary              1.3250          0.46          0.0850
## Secondary            64.2625         22.31          4.1225
## High school          86.1250         29.90          5.5250
## Undergraduate        89.4375         31.05          5.7375
## Postgraduate         23.8500          8.28          1.5300
##
##      Specialist waste collection Landfill Deposit return scheme
## Primary              0.030          0.0150          0.010
## Secondary            1.455          0.7275          0.485
## High school          1.950          0.9750          0.650
## Undergraduate        2.025          1.0125          0.675
## Postgraduate         0.540          0.2700          0.180
##
##      Indefinite storage Other I don't know
## Primary              0.0150 0.030          0.030
## Secondary            0.7275 1.455          1.455
## High school          0.9750 1.950          1.950
## Undergraduate        1.0125 2.025          2.025
## Postgraduate         0.2700 0.540          0.540

```

```
chi.edu.bagpurchase.sim$observed
```

```

##
##      None 1-2 3-5 6-10 11-15 16+ I don't know
## Primary      1   0   1   0   0   0           0
## Secondary    53  18  15   3   5   1           2
## High school  78  22  15   6   4   2           3

```

##	Undergraduate	79	32	7	7	4	4	2
##	Postgraduate	21	5	5	3	1	1	0

chi.edu.bagpurchase.sim\$expected

##		None	1-2	3-5	6-10	11-15	16+	I don't know
##	Primary	1.16	0.3850	0.2150	0.0950	0.070	0.04	0.0350
##	Secondary	56.26	18.6725	10.4275	4.6075	3.395	1.94	1.6975
##	High school	75.40	25.0250	13.9750	6.1750	4.550	2.60	2.2750
##	Undergraduate	78.30	25.9875	14.5125	6.4125	4.725	2.70	2.3625
##	Postgraduate	20.88	6.9300	3.8700	1.7100	1.260	0.72	0.6300

chi.edu.bagreuse.sim\$observed

##		Never	Once	2-4 times	5-10 times	More often
##	Primary	0	0	1	0	1
##	Secondary	11	12	24	18	32
##	High school	10	13	29	21	57
##	Undergraduate	8	16	31	26	54
##	Postgraduate	2	3	8	5	18

chi.edu.bagreuse.sim\$expected

##		Never	Once	2-4 times	5-10 times	More often
##	Primary	0.1550	0.22	0.4650	0.350	0.810
##	Secondary	7.5175	10.67	22.5525	16.975	39.285
##	High school	10.0750	14.30	30.2250	22.750	52.650
##	Undergraduate	10.4625	14.85	31.3875	23.625	54.675
##	Postgraduate	2.7900	3.96	8.3700	6.300	14.580

chi.edu.bagdisp.sim\$observed

##		General waste bin	Recycling bin	Recycling centre
##	Primary	1	1	0
##	Secondary	43	21	5
##	High school	48	31	6
##	Undergraduate	37	33	14
##	Postgraduate	14	6	4
##		Specialist waste collection	Landfill	Deposit return scheme
##	Primary	0	0	0
##	Secondary	2	0	1
##	High school	3	0	3
##	Undergraduate	3	1	6
##	Postgraduate	0	1	1
##		Indefinite storage	Other	I don't know

## Primary	0	0	0
## Secondary	21	1	3
## High school	31	4	4
## Undergraduate	23	16	2
## Postgraduate	8	2	0

```
chi.edu.bagdisp.sim$expected
```

##	General waste bin	Recycling bin	Recycling centre
## Primary	0.7150	0.46	0.1450
## Secondary	34.6775	22.31	7.0325
## High school	46.4750	29.90	9.4250
## Undergraduate	48.2625	31.05	9.7875
## Postgraduate	12.8700	8.28	2.6100

##	Specialist waste collection	Landfill	Deposit return scheme
## Primary	0.04	0.010	0.0550
## Secondary	1.94	0.485	2.6675
## High school	2.60	0.650	3.5750
## Undergraduate	2.70	0.675	3.7125
## Postgraduate	0.72	0.180	0.9900

##	Indefinite storage	Other I don't know
## Primary	0.4150 0.1150	0.0450
## Secondary	20.1275 5.5775	2.1825
## High school	26.9750 7.4750	2.9250
## Undergraduate	28.0125 7.7625	3.0375
## Postgraduate	7.4700 2.0700	0.8100

Gender

```
chi.gen.choice <- chisq.test(gen.choice)
```

```
## Warning in chisq.test(gen.choice): Chi-squared approximation may be incorrect
```

```
chi.gen.choice.sim <- chisq.test(gen.choice, simulate.p.value = TRUE)
chi.gen.choice.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data: gen.choice
## X-squared = 7.8125, df = NA, p-value = 0.2409
```

```
chi.gen.barrier <- chisq.test(gen.barrier)
```

```
## Warning in chisq.test(gen.barrier): Chi-squared approximation may be incorrect
```

```
chi.gen.barrier.sim <- chisq.test(gen.barrier, simulate.p.value = TRUE)
chi.gen.barrier.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data:  gen.barrier
## X-squared = 22.552, df = NA, p-value = 0.3553
```

```
chi.gen.barrier2 <- chisq.test(gen.barrier2)
```

```
## Warning in chisq.test(gen.barrier2): Chi-squared approximation may be incorrect
```

```
chi.gen.barrier2.sim <- chisq.test(gen.barrier2, simulate.p.value = TRUE)
chi.gen.barrier2.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data:  gen.barrier2
## X-squared = 15.784, df = NA, p-value = 0.3148
```

```
chi.gen.mainconsid <- chisq.test(gen.mainconsid)
```

```
## Warning in chisq.test(gen.mainconsid): Chi-squared approximation may be
## incorrect
```

```
chi.gen.mainconsid.sim <- chisq.test(gen.mainconsid, simulate.p.value =
TRUE)
chi.gen.mainconsid.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data:  gen.mainconsid
## X-squared = 15.92, df = NA, p-value = 0.5482
```

```
chi.gen.litter <- chisq.test(gen.litter)
```

```
## Warning in chisq.test(gen.litter): Chi-squared approximation may be incorrect
```

```
chi.gen.litter.sim <- chisq.test(gen.litter, simulate.p.value = TRUE)
chi.gen.litter.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data:  gen.litter
## X-squared = 9.2783, df = NA, p-value = 0.2519
```

```
chi.gen.attitude <- chisq.test(gen.attitude)
```

```
## Warning in chisq.test(gen.attitude): Chi-squared approximation may be incorrect
```

```
chi.gen.attitude.sim <- chisq.test(gen.attitude, simulate.p.value = TRUE)
chi.gen.attitude.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data:  gen.attitude
## X-squared = 10.289, df = NA, p-value = 0.5852
```

```
chi.gen.ocean <- chisq.test(gen.ocean)
```

```
## Warning in chisq.test(gen.ocean): Chi-squared approximation may be incorrect
```

```
chi.gen.ocean.sim <- chisq.test(gen.ocean, simulate.p.value = TRUE)
chi.gen.ocean.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data:  gen.ocean
## X-squared = 12.974, df = NA, p-value = 0.1244
```

```
chi.gen.actions <- chisq.test(gen.actions)
```

```
## Warning in chisq.test(gen.actions): Chi-squared approximation may be incorrect
```

```
chi.gen.actions.sim <- chisq.test(gen.actions, simulate.p.value = TRUE)
chi.gen.actions.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data:  gen.actions
## X-squared = 12.17, df = NA, p-value = 0.2074
```

```
chi.gen.attplast <- chisq.test(gen.attplast)
```

```
## Warning in chisq.test(gen.attplast): Chi-squared approximation may be incorrect
```

```
chi.gen.attplast.sim <- chisq.test(gen.attplast, simulate.p.value = TRUE)
chi.gen.attplast.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data:  gen.attplast
## X-squared = 6.1731, df = NA, p-value = 0.3808
```

```
chi.gen.zerow <- chisq.test(gen.zerow)
```

```
## Warning in chisq.test(gen.zerow): Chi-squared approximation may be incorrect
```

```
chi.gen.zerow.sim <- chisq.test(gen.zerow, simulate.p.value = TRUE)
chi.gen.zerow.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data:  gen.zerow
## X-squared = 20.793, df = NA, p-value = 0.03248
```

```
chi.gen.bottpurchase <- chisq.test(gen.bottpurchase)
```

```
## Warning in chisq.test(gen.bottpurchase): Chi-squared approximation may be
## incorrect
```

```
chi.gen.bottpurchase.sim <- chisq.test(gen.bottpurchase, simulate.p.value =
TRUE)
chi.gen.bottpurchase.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data:  gen.bottpurchase
## X-squared = 29.989, df = NA, p-value = 0.02449
```

```
chi.gen.bottreuse <- chisq.test(gen.bottreuse)
```

```
## Warning in chisq.test(gen.bottreuse): Chi-squared approximation may be incorrect
```

```
chi.gen.bottreuse.sim <- chisq.test(gen.bottreuse, simulate.p.value = TRUE)
chi.gen.bottreuse.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data:  gen.bottreuse
## X-squared = 9.8272, df = NA, p-value = 0.2754
```

```
chi.gen.bottdisp <- chisq.test(gen.bottdisp)
```

```
## Warning in chisq.test(gen.bottdisp): Chi-squared approximation may be incorrect
```

```
chi.gen.bottdisp.sim <- chisq.test(gen.bottdisp, simulate.p.value = TRUE)
chi.gen.bottdisp.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data:  gen.bottdisp
## X-squared = 166.58, df = NA, p-value = 0.0004998
```

```
chi.gen.tubspurchase <- chisq.test(gen.tubspurchase)
```

```
## Warning in chisq.test(gen.tubspurchase): Chi-squared approximation may be
## incorrect
```

```
chi.gen.tubspurchase.sim <- chisq.test(gen.tubspurchase, simulate.p.value =
TRUE)
chi.gen.tubspurchase.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data:  gen.tubspurchase
## X-squared = 21.081, df = NA, p-value = 0.07446
```

```
chi.gen.tubreuse <- chisq.test(gen.tubreuse)
```

```
## Warning in chisq.test(gen.tubreuse): Chi-squared approximation may be incorrect
```

```
chi.gen.tubreuse.sim <- chisq.test(gen.tubreuse, simulate.p.value = TRUE)
chi.gen.tubreuse.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data:  gen.tubreuse
## X-squared = 16.833, df = NA, p-value = 0.02949
```

```
chi.gen.tubdisp <- chisq.test(gen.tubdisp)
```

```
## Warning in chisq.test(gen.tubdisp): Chi-squared approximation may be incorrect
```

```
chi.gen.tubdisp.sim <- chisq.test(gen.tubdisp, simulate.p.value = TRUE)
chi.gen.tubdisp.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data:  gen.tubdisp
## X-squared = 42.329, df = NA, p-value = 0.04198
```

```
chi.gen.filmpurchase <- chisq.test(gen.filmpurchase)
```

```
## Warning in chisq.test(gen.filmpurchase): Chi-squared approximation may be
## incorrect
```

```
chi.gen.filmpurchase.sim <- chisq.test(gen.filmpurchase, simulate.p.value =
TRUE)
chi.gen.filmpurchase.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data:  gen.filmpurchase
## X-squared = 18.059, df = NA, p-value = 0.1509
```

```
chi.gen.filmreuse <- chisq.test(gen.filmreuse)
```

```
## Warning in chisq.test(gen.filmreuse): Chi-squared approximation may be incorrect
```

```
chi.gen.filmreuse.sim <- chisq.test(gen.filmreuse, simulate.p.value = TRUE)
chi.gen.filmreuse.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data:  gen.filmreuse
## X-squared = 14.054, df = NA, p-value = 0.1039
```

```
chi.gen.filmdisp <- chisq.test(gen.filmdisp)
```

```
## Warning in chisq.test(gen.filmdisp): Chi-squared approximation may be incorrect
```

```
chi.gen.filmdisp.sim <- chisq.test(gen.filmdisp, simulate.p.value = TRUE)
chi.gen.filmdisp.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data:  gen.filmdisp
## X-squared = 51.309, df = NA, p-value = 0.04448
```

```
chi.gen.bagpurchase <- chisq.test(gen.bagpurchase)
```

```
## Warning in chisq.test(gen.bagpurchase): Chi-squared approximation may be
## incorrect
```

```
chi.gen.bagpurchase.sim <- chisq.test(gen.bagpurchase, simulate.p.value =
TRUE)
chi.gen.bagpurchase.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data:  gen.bagpurchase
## X-squared = 23.072, df = NA, p-value = 0.07946
```

```
chi.gen.bagreuse <- chisq.test(gen.bagreuse)
```

```
## Warning in chisq.test(gen.bagreuse): Chi-squared approximation may be incorrect
```

```
chi.gen.bagreuse.sim <- chisq.test(gen.bagreuse, simulate.p.value = TRUE)
chi.gen.bagreuse.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data:  gen.bagreuse
## X-squared = 10.725, df = NA, p-value = 0.2144
```

```
chi.gen.bagdisp <- chisq.test(gen.bagdisp)
```

```
## Warning in chisq.test(gen.bagdisp): Chi-squared approximation may be incorrect
```

```
chi.gen.bagdisp.sim <- chisq.test(gen.bagdisp, simulate.p.value = TRUE)
chi.gen.bagdisp.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data:  gen.bagdisp
## X-squared = 41.385, df = NA, p-value = 0.01699
```

Simulated residuals for 'gender'

```
chi.gen.choice.sim$residuals
```

```
##
##           Always As often as they can If cheaper or preferred
## Male      0.66390964          -0.78991945          0.02659163
## Female    -0.47400020          0.69249506         -0.03723606
## Other     -0.58736701         -0.44835883          0.13937463
##
##           Rarely or never
## Male          1.20556025
## Female        -1.16325962
## Other          1.63384346
```

```
chi.gen.barrier.sim$residuals
```

```
##
##           Council collection Unclear information Difficult transport
## Male          0.233686213          -1.311445672          -0.641559515
## Female         -0.085954178           1.142700283           0.575657095
## Other          -0.928708781          -0.681909085          -0.482182538
##
##           No local facilities  No support Ends up in landfills  Forgetting
## Male          -1.028723994   1.083834678           0.267283282   1.630892433
## Female          0.893829715  -0.840071780          -0.386786067  -1.536259790
## Other          -0.512347538  -0.367423461           1.512581912   1.876388375
##
##           Recycling a hassle Household disagrees Recycling not important
## Male          0.528312336           0.017789202           0.017789202
## Female         -0.398873938           0.007231961           0.007231961
## Other          -0.273861279          -0.193649167          -0.193649167
##
##           Other Already doing everything
## Male          -0.461423225           0.312961185
## Female          0.394576199          -0.352560344
## Other          -0.173205081           0.875603384
```

```
chi.gen.barrier2.sim$residuals
```

```
##
##      Limited alternatives No SUP-free alternatives Alternatives expensive
## Male      0.57862780      1.10883039      -1.13471748
## Female    -0.51478602      -0.81210575      0.87174203
## Other      0.39557740      -0.79843597      0.45401261
##
##      Limited functioning Forgetting reusables Reducing not important
## Male      0.66115991      -1.96230296      -0.05957493
## Female    -0.47697804      1.65686097      0.08342233
## Other     -0.54083269      -0.54772256      -0.31224990
##
##      Other No barriers
## Male      0.47253692  0.30189276
## Female    -0.35676370 -0.38864640
## Other     -0.24494897  1.27801930
```

```
chi.gen.mainconsid.sim$residuals
```

```
##
##      Value for money      Price      Quality Deals/discounts
## Male      -0.0007292862 -0.8586552980  1.3976142750  -1.0203813938
## Female    -0.1307483337  0.6623554055 -1.0453432392   0.8791188862
## Other      1.1723023147  0.3194846581 -0.8124038405  -0.4415880433
##
##      Use-by-dates/longevity  Convenience Ease of recycling packaging
## Male      -1.0758654366  0.0251577303      0.7836138289
## Female     0.9110614003  0.0102275369      -0.5916256591
## Other     -0.3240370349 -0.2738612788      -0.4062019202
##
##      Sustainability      Brand      Ethics      Other
## Male     -0.0595749305  0.3341340594 -0.6937788653  1.3613563601
## Female    0.0834223320 -0.2522700287  0.5857888148 -1.0931605555
## Other    -0.3122498999 -0.1732050808 -0.1936491673 -0.1224744871
```

```
chi.gen.litter.sim$residuals
```

```
##
##      Strongly agree      Agree Neither agree nor disagree      Disagree
## Male      -1.3711972  1.2513478      0.4513190 -0.6525510
## Female     1.0457874 -0.8939421      -0.4740210  0.5580150
## Other      0.6167266 -1.1022704      0.9556272 -0.2449490
##
##      Strongly disagree
## Male      0.3341341
## Female    -0.2522700
## Other     -0.1732051
```

```
chi.gen.attitude.sim$residuals
```

```
##
##      1 (Not concerned)      2      3      4      5
## Male      0.1025804  0.3913624 -0.2969460 -1.0866280 -0.3025137
```

```
## Female -0.2819599 -0.2748145 0.3035663 0.9664078 0.2283968
## Other 1.7722222 -0.3872983 -0.5545268 -0.7399324 0.1568140
##
## 6 7 (Very concerned
## Male 0.8249719 0.7173461
## Female -0.7710311 -0.5026582
## Other 0.8949594 -0.7193747
```

```
chi.gen.ocean.sim$residuals
```

```
##
## Always Most of the time Sometimes Rarely Never
## Male -0.54936521 -0.01248173 -0.45003516 1.08868364 0.10998206
## Female 0.48896713 -0.14461696 0.50312829 -0.81002264 -0.36318473
## Other -0.37749172 1.38137798 -1.22474487 -0.67082039 2.44348875
```

```
chi.gen.actions.sim$residuals
```

```
##
## Yes, definitely Yes, probably No, probably not No, definitely not
## Male 0.25502963 -0.51174845 0.48892503 0.31422911
## Female -0.20030106 0.45657449 -0.33390698 -0.61337399
## Other -0.06298521 -0.36135893 -0.56789083 3.19432499
##
## I don't know
## Male -0.05957493
## Female 0.08342233
## Other -0.31224990
```

```
chi.gen.attplast.sim$residuals
```

```
##
## Will go out of their way to avoid
## Male -0.5183192
## Female 0.3913291
## Other 0.2686811
##
## If option is readily available, will avoid
## Male 0.3114376
## Female -0.1975829
## Other -0.4966093
##
## Will avoid only without extra costs Not a priority
## Male -0.1901205 0.4443871
## Female 0.2284753 -0.5916257
## Other -0.6595453 2.0556279
```

```
chi.gen.bottpurchase.sim$residuals
```

```
##
## None 1-2 3-5 6-10 11-15 16+
```

```
## Male 1.0380524 -0.9671995 -0.5401839 0.6973117 1.6407951 1.0503508
## Female -0.8104014 0.8999710 0.5515258 -0.7842770 -1.2917933 -0.8177079
## Other -0.3000000 -1.0136567 -1.0024969 1.9396410 -0.3774917 -0.3240370
##
## I don't know
## Male -0.9811515
## Female 0.4193290
## Other 3.3776224
```

```
chi.gen.bottreuse.sim$residuals
```

```
##
## Never Once 2-4 times 5-10 times More often
## Male 1.1244860 0.9655536 -0.4139654 -0.1085354 -1.3445199
## Female -0.9860660 -0.8654832 0.4467856 0.1615009 1.0309038
## Other 0.6406514 0.7177757 -0.9836158 -0.6538348 0.5559692
```

```
chi.gen.bottdisp.sim$residuals
```

```
##
## General waste bin Recycling bin Recycling centre
## Male -0.81605003 0.39007445 0.52831234
## Female 0.71392500 -0.21286800 -0.39887394
## Other -0.45000000 -0.93086200 -0.27386128
##
## Specialist waste collection Landfill Deposit return scheme
## Male 0.14132542 0.72935727 0.33413406
## Female -0.08923699 -1.14988175 -0.25227003
## Other -0.22912878 4.97032863 -0.17320508
##
## Indefinite storage Other I don't know
## Male -1.32062509 -0.88881944 -0.62849025
## Female 1.11257551 0.73639686 -0.77298124
## Other -0.34641016 -0.12247449 11.46040284
```

```
chi.gen.tubspurchase.sim$residuals
```

```
##
## None 1-2 3-5 6-10 11-15
## Male 1.49736759 0.20516079 -0.33064338 -0.09923385 -1.02082314
## Female -1.18385819 -0.19046299 0.27668057 0.17013879 0.88225444
## Other -0.30000000 0.21111111 -0.07000666 -0.79843597 -0.46636895
##
## 16+ I don't know
## Male 1.26431241 -0.47799688
## Female -0.99299486 0.01022754
## Other -0.31224990 3.37762244
```

```
chi.gen.tubreuse.sim$residuals
```

```
##
```

```
##           Never      Once   2-4 times  5-10 times  More often
## Male      1.61041723  1.19399612 -0.05088926 -1.23473835 -0.86286611
## Female    -1.23360647 -0.90867858  0.13693714  0.73808576  0.70941657
## Other     -0.67638746 -0.55452683 -0.85293611  2.37284688 -0.07000666
```

```
chi.gen.tubdisp.sim$residuals
```

```
##
##           General waste bin Recycling bin Recycling centre
## Male      -0.33800136   1.16711507   0.75195221
## Female     0.36479889  -0.80801011  -0.55914151
## Other      -0.80311892  -1.25797456  -0.46636895
##
##           Specialist waste collection   Landfill Deposit return scheme
## Male      -0.33989326 -0.16994663   0.33413406
## Female     -0.06348766  0.15498459  -0.25227003
## Other       3.03333333 -0.15000000  -0.17320508
##
##           Indefinite storage   Other I don't know
## Male      -2.10896791 -0.46005936  -0.88991063
## Female     1.57800463 -0.08923699  0.74732904
## Other       1.22049300  4.13522902  -0.21213203
```

```
chi.gen.filmpurchase.sim$residuals
```

```
##
##           None      1-2      3-5      6-10      11-15
## Male      0.11942196 -0.72566820 -0.31547551  1.10238928 -0.86753352
## Female    -0.06348766  0.67894795  0.36367440 -0.91488237  0.55880489
## Other     -0.30000000 -0.79372539 -0.95655632  0.16565326  1.30816796
##
##           16+ I don't know
## Male      0.70880538  0.11942196
## Female    -0.53514554 -0.43694451
## Other     -0.36742346  3.03333333
```

```
chi.gen.filmreuse.sim$residuals
```

```
##
##           Never      Once   2-4 times  5-10 times  More often
## Male     -0.1263587 -0.8356884  1.0111637 -0.3398933  0.8524598
## Female    0.1675823  0.7678715 -0.9268993  0.3099692 -0.9895637
## Other     -0.5787674 -0.7889867  0.9349523 -0.3000000  2.6460138
```

```
chi.gen.bagpurhcase.sim$residuals
```

```
##
##           None      1-2      3-5      6-10      11-15
## Male      0.24652982 -1.16319560  0.00363964  0.91074166  0.62510759
## Female    -0.13759481  0.88347390  0.06066552 -0.69820648 -0.47195401
## Other     -0.56099255  0.55596918 -0.56789083 -0.37749172 -0.32403703
```

```
##
##           16+ I don't know
## Male    0.47253692 -0.46005936
## Female -0.35676370 -0.08923699
## Other   -0.24494897  4.13522902
```

```
chi.gen.bagreuse.sim$residuals
```

```
##
##           Never      Once    2-4 times  5-10 times  More often
## Male    0.50153094  1.58793640 -0.12126831  0.82725936 -1.49886710
## Female -0.35375900 -1.22674798  0.05801973 -0.59144377  1.13889949
## Other   -0.48218254 -0.57445626  0.36220403 -0.72456884  0.71216646
```

```
chi.gen.bagdisp.sim$residuals
```

```
##
##           General waste bin Recycling bin Recycling centre
## Male      0.86685778    1.43656549    -0.72536058
## Female    -0.58879141   -1.07496779     0.64202178
## Other     -1.03561576   -0.83066239    -0.46636895
##
##           Specialist waste collection    Landfill Deposit return scheme
## Male                -0.65255098    0.23626846    -0.16550999
## Female              0.10062566   -0.17838185     0.16675191
## Other              3.83753393   -0.12247449    -0.28722813
##
##           Indefinite storage      Other I don't know
## Male      -1.70892592  -0.02820048   -0.82472772
## Female     1.33587624  0.06946153    0.26844118
## Other     0.47846181  -0.41533119    3.58919417
```

Simulated observed and expected values for 'gender'

```
chi.gen.choice.sim$observed
```

```
##
##           Always As often as they can If cheaper or preferred Rarely or never
## Male      21           75           46           16
## Female    25           132          69           13
## Other      0           1           1           1
```

```
chi.gen.choice.sim$expected
```

```
##
##           Always As often as they can If cheaper or preferred Rarely or never
## Male    18.170           82.16           45.82           11.850
## Female  27.485           124.28           69.31           17.925
## Other   0.345           1.56           0.87           0.225
```

```
chi.gen.barrier.sim$observed
```

```
##
##      Council collection Unclear information Difficult transport
## Male                47                18                10
## Female              68                44                21
## Other                0                 0                 0
##
##      No local facilities No support Ends up in landfills Forgetting
## Male                10                10                14        15
## Female              25                 8                18         9
## Other                0                 0                 1         1
##
##      Recycling a hassle Household disagrees Recycling not important Other
## Male                 5                 2                 2         1
## Female               5                 3                 3         3
## Other                0                 0                 0         0
##
##      Already doing everything
## Male                 24
## Female               32
## Other                1
```

```
chi.gen.barrier.sim$expected
```

```
##
##      Council collection Unclear information Difficult transport
## Male                45.4250            24.490            12.2450
## Female              68.7125            37.045            18.5225
## Other                0.8625            0.465             0.2325
##
##      No local facilities No support Ends up in landfills Forgetting
## Male                13.8250             7.110            13.0350     9.8750
## Female              20.9125            10.755            19.7175    14.9375
## Other                0.2625             0.135             0.2475     0.1875
##
##      Recycling a hassle Household disagrees Recycling not important Other
## Male                 3.950             1.9750            1.9750     1.58
## Female               5.975             2.9875            2.9875     2.39
## Other                0.075             0.0375            0.0375     0.03
##
##      Already doing everything
## Male                22.5150
## Female              34.0575
## Other                0.4275
```

```
chi.gen.barrier2.sim$observed
```

```
##
##      Limited alternatives No SUP-free alternatives Alternatives expensive
## Male                39                40                27
```

```

##      Female                50                45                57
##      Other                 1                 0                 1
##
##      Limited functioning Forgetting reusables Reducing not important Other
##      Male                 18                 8                 5         4
##      Female               21                32                 8         4
##      Other                 0                 0                 0         0
##
##      No barriers
##      Male                 17
##      Female               22
##      Other                 1

```

```
chi.gen.barrier2.sim$expected
```

```

##
##      Limited alternatives No SUP-free alternatives Alternatives expensive
##      Male                 35.550             33.5750             33.5750
##      Female               53.775             50.7875             50.7875
##      Other                 0.675             0.6375             0.6375
##
##      Limited functioning Forgetting reusables Reducing not important Other
##      Male                 15.4050            15.8                 5.1350  3.16
##      Female               23.3025            23.9                 7.7675  4.78
##      Other                 0.2925            0.3                 0.0975  0.06
##
##      No barriers
##      Male                 15.8
##      Female               23.9
##      Other                 0.3

```

```
chi.gen.mainconsid.sim$observed
```

```

##
##      Value for money Price Quality Deals/discounts Use-by-dates/longevity
##      Male                 47      33      43              7              3
##      Female               70      63      45             19             11
##      Other                 2       1       0              0              0
##
##      Convenience Ease of recycling packaging Sustainability Brand Ethics
##      Male                 4              11              5       2       1
##      Female               6              11              8       2       4
##      Other                 0              0              0       0       0
##
##      Other
##      Male                 2
##      Female               0
##      Other                 0

```

```
chi.gen.mainconsid.sim$expected
```

```
##
```

```
##          Value for money  Price Quality Deals/discounts Use-by-dates/longevity
##  Male          47.0050 38.3150   34.76           10.270           5.530
##  Female        71.1025 57.9575   52.58           15.535           8.365
##  Other         0.8925 0.7275    0.66           0.195           0.105
##
##          Convenience Ease of recycling packaging Sustainability Brand Ethics
##  Male          3.950                8.690           5.1350 1.58 1.9750
##  Female        5.975                13.145          7.7675 2.39 2.9875
##  Other         0.075                0.165           0.0975 0.03 0.0375
##
##          Other
##  Male 0.790
##  Female 1.195
##  Other 0.015
```

```
chi.gen.litter.sim$observed
```

```
##
##          Strongly agree Agree Neither agree nor disagree Disagree
##  Male          57    74                23    2
##  Female        114    88                29    6
##  Other          2     0                1     0
##
##          Strongly disagree
##  Male          2
##  Female        2
##  Other          0
```

```
chi.gen.litter.sim$expected
```

```
##
##          Strongly agree Agree Neither agree nor disagree Disagree
##  Male          68.3350 63.990                20.9350   3.16
##  Female        103.3675 96.795                31.6675   4.78
##  Other          1.2975 1.215                0.3975   0.06
##
##          Strongly disagree
##  Male          1.58
##  Female        2.39
##  Other          0.03
```

```
chi.gen.attitude.sim$observed
```

```
##
##          1 (Not concerned) 2 3 4 5 6 7 (Very concerned)
##  Male          11 9 15 23 43 26           31
##  Female        15 11 26 50 70 29           38
##  Other          1 0 0 0 1 1           0
```

```
chi.gen.attitude.sim$expected
```

```
##
##      1 (Not concerned)      2      3      4      5      6 7 (Very concerned)
## Male      10.6650  7.90 16.1950 28.8350 45.030 22.12      27.2550
## Female     16.1325 11.95 24.4975 43.6175 68.115 33.46      41.2275
## Other      0.2025 0.15 0.3075 0.5475 0.855 0.42      0.5175
```

```
chi.gen.ocean.sim$observed
```

```
##
##      Always Most of the time Sometimes Rarely Never
## Male      6      41      75      29      7
## Female    13      61     125     31      9
## Other      0      2      0      0      1
```

```
chi.gen.ocean.sim$expected
```

```
##
##      Always Most of the time Sometimes Rarely Never
## Male    7.5050      41.08      79.0  23.70  6.7150
## Female 11.3525      62.14     119.5  35.85 10.1575
## Other   0.1425      0.78      1.5   0.45  0.1275
```

```
chi.gen.actions.sim$observed
```

```
##
##      Yes, definitely Yes, probably No, probably not No, definitely not
## Male      58      71      19      5
## Female    83     119      24      5
## Other      1      1      0      1
##
##      I don't know
## Male      5
## Female    8
## Other     0
```

```
chi.gen.actions.sim$expected
```

```
##
##      Yes, definitely Yes, probably No, probably not No, definitely not
## Male    56.090     75.4450     16.9850     4.3450
## Female   84.845    114.1225     25.6925     6.5725
## Other    1.065     1.4325      0.3225     0.0825
##
##      I don't know
## Male     5.1350
## Female   7.7675
## Other    0.0975
```

```
chi.gen.attplast.sim$observed
```

```
##
##      Will go out of their way to avoid
##  Male                      37
##  Female                    64
##  Other                      1
##
##      If option is readily available, will avoid
##  Male                      89
##  Female                    128
##  Other                      1
##
##      Will avoid only without extra costs Not a priority
##  Male                      22          10
##  Female                    36          11
##  Other                      0           1
```

```
chi.gen.attplast.sim$expected
```

```
##
##      Will go out of their way to avoid
##  Male                      40.290
##  Female                    60.945
##  Other                      0.765
##
##      If option is readily available, will avoid
##  Male                      86.110
##  Female                    130.255
##  Other                      1.635
##
##      Will avoid only without extra costs Not a priority
##  Male                      22.910          8.690
##  Female                    34.655          13.145
##  Other                      0.435          0.165
```

```
chi.gen.bottpurchase.sim$observed
```

```
##
##      None 1-2 3-5 6-10 11-15 16+ I don't know
##  Male      7  47  49   33   12   8           2
##  Female     5  90  85   39    7   6           7
##  Other      0   0   0    2    0   0           1
```

```
chi.gen.bottpurchase.sim$expected
```

```
##
##      None      1-2      3-5      6-10      11-15      16+ I don't know
##  Male  4.74 54.1150 52.930 29.230 7.5050 5.530          3.950
##  Female 7.17 81.8575 80.065 44.215 11.3525 8.365          5.975
##  Other 0.09 1.0275 1.005 0.555 0.1425 0.105          0.075
```

```
chi.gen.bottreuse.sim$observed
```

```
##
##      Never Once 2-4 times 5-10 times More often
## Male      34  31      48      22      23
## Female    36  34      81      35      53
## Other      1   1       0       0       1
```

```
chi.gen.bottreuse.sim$expected
```

```
##
##      Never  Once 2-4 times 5-10 times More often
## Male  28.0450 26.070  50.9550  22.5150  30.4150
## Female 42.4225 39.435  77.0775  34.0575  46.0075
## Other  0.5325 0.495  0.9675  0.4275  0.5775
```

```
chi.gen.bottdisp.sim$observed
```

```
##
##      General waste bin Recycling bin Recycling centre
## Male              8          134          5
## Female            19          193          5
## Other              0           1          0
##
##      Specialist waste collection Landfill Deposit return scheme
## Male              3           3          2
## Female            4           1          2
## Other              0           1          0
##
##      Indefinite storage Other I don't know
## Male              3           0           0
## Female            13          2           0
## Other              0           0           1
```

```
chi.gen.bottdisp.sim$expected
```

```
##
##      General waste bin Recycling bin Recycling centre
## Male      10.6650      129.56      3.950
## Female     16.1325     195.98      5.975
## Other       0.2025       2.46      0.075
##
##      Specialist waste collection Landfill Deposit return scheme
## Male       2.7650      1.9750      1.58
## Female     4.1825      2.9875      2.39
## Other      0.0525      0.0375      0.03
##
##      Indefinite storage Other I don't know
## Male       6.32 0.790      0.3950
## Female     9.56 1.195      0.5975
## Other      0.12 0.015      0.0075
```

```
chi.gen.tubspurchase.sim$observed
```

```
##
##      None 1-2 3-5 6-10 11-15 16+ I don't know
## Male      8 44 54 33      8 8      3
## Female    4 63 88 52     21 5      6
## Other     0 1 1 0      0 0      1
```

```
chi.gen.tubspurchase.sim$expected
```

```
##
##      None 1-2 3-5 6-10 11-15 16+ I don't know
## Male  4.74 42.66 56.4850 33.5750 11.4550 5.1350      3.950
## Female 7.17 64.53 85.4425 50.7875 17.3275 7.7675      5.975
## Other 0.09 0.81 1.0725 0.6375 0.2175 0.0975      0.075
```

```
chi.gen.tubreuse.sim$observed
```

```
##
##      Never Once 2-4 times 5-10 times More often
## Male      32 21      38      17      50
## Female     29 20      59      39      92
## Other      0 0      0      2      1
```

```
chi.gen.tubreuse.sim$expected
```

```
##
##      Never Once 2-4 times 5-10 times More often
## Male  24.0950 16.1950 38.3150 22.910 56.4850
## Female 36.4475 24.4975 57.9575 34.655 85.4425
## Other  0.4575 0.3075 0.7275 0.435 1.0725
```

```
chi.gen.tubdisp.sim$observed
```

```
##
##      General waste bin Recycling bin Recycling centre
## Male      32      94      14
## Female     54     117      15
## Other      0      0      0
##
##      Specialist waste collection Landfill Deposit return scheme
## Male      4      1      2
## Female     7      2      2
## Other     1      0      0
##
##      Indefinite storage Other I don't know
## Male      8      2      1
## Female     33     4      5
## Other      1      1      0
```

```
chi.gen.tubdisp.sim$expected
```

```
##
##      General waste bin Recycling bin Recycling centre
## Male      33.970      83.3450      11.4550
## Female    51.385      126.0725      17.3275
## Other      0.645       1.5825       0.2175
##
##      Specialist waste collection Landfill Deposit return scheme
## Male      4.74      1.1850      1.58
## Female    7.17      1.7925      2.39
## Other     0.09      0.0225      0.03
##
##      Indefinite storage Other I don't know
## Male     16.590 2.7650      2.370
## Female   25.095 4.1825      3.585
## Other     0.315 0.0525      0.045
```

```
chi.gen.filmpurchase.sim$observed
```

```
##
##      None 1-2 3-5 6-10 11-15 16+ I don't know
## Male      5 29 46 52 12 9 5
## Female     7 55 76 60 26 9 6
## Other      0 0 0 1 1 0 1
```

```
chi.gen.filmpurchase.sim$expected
```

```
##
##      None 1-2 3-5 6-10 11-15 16+ I don't know
## Male    4.74 33.18 48.190 44.6350 15.4050 7.110 4.74
## Female  7.17 50.19 72.895 67.5175 23.3025 10.755 7.17
## Other   0.09 0.63 0.915 0.8475 0.2925 0.135 0.09
```

```
chi.gen.filmreuse.sim$observed
```

```
##
##      Never Once 2-4 times 5-10 times More often
## Male     92 28 26 4 8
## Female   143 55 27 8 6
## Other     1 0 1 0 1
```

```
chi.gen.filmreuse.sim$expected
```

```
##
##      Never Once 2-4 times 5-10 times More often
## Male    93.22 32.7850 21.330 4.74 5.9250
## Female  141.01 49.5925 32.265 7.17 8.9625
## Other    1.77 0.6225 0.405 0.09 0.1125
```

```
chi.gen.bagpurhcase.sim$observed
```

```
##
##      None 1-2 3-5 6-10 11-15 16+ I don't know
## Male      94 24 17 10 7 4 2
## Female    137 52 26 9 7 4 4
## Other      1 1 0 0 0 0 1
```

```
chi.gen.bagpurhcase.sim$expected
```

```
##
##      None      1-2      3-5      6-10 11-15 16+ I don't know
## Male    91.64 30.4150 16.9850 7.5050 5.530 3.16 2.7650
## Female  138.62 46.0075 25.6925 11.3525 8.365 4.78 4.1825
## Other    1.74 0.5775 0.3225 0.1425 0.105 0.06 0.0525
```

```
chi.gen.bagreuse.sim$observed
```

```
##
##      Never Once 2-4 times 5-10 times More often
## Male      14 24 36 32 52
## Female     17 20 56 38 108
## Other       0 0 1 0 2
```

```
chi.gen.bagreuse.sim$expected
```

```
##
##      Never Once 2-4 times 5-10 times More often
## Male    12.2450 17.38 36.7350 27.650 63.990
## Female   18.5225 26.29 55.5675 41.825 96.795
## Other     0.2325 0.33 0.6975 0.525 1.215
```

```
chi.gen.bagdisp.sim$observed
```

```
##
##      General waste bin Recycling bin Recycling centre
## Male              63          45          9
## Female            80          47         20
## Other             0          0          0
##
##      Specialist waste collection Landfill Deposit return scheme
## Male              2          1          4
## Female            5          1          7
## Other             1          0          0
##
##      Indefinite storage Other I don't know
## Male              23          9          2
## Female            59         14          6
## Other             1          0          1
```

```
chi.gen.bagdisp.sim$expected
```

```
##
##      General waste bin Recycling bin Recycling centre
## Male      56.4850      36.34      11.4550
## Female    85.4425      54.97      17.3275
## Other     1.0725      0.69      0.2175
##
##      Specialist waste collection Landfill Deposit return scheme
## Male              3.16      0.790      4.3450
## Female            4.78      1.195      6.5725
## Other             0.06      0.015      0.0825
##
##      Indefinite storage      Other I don't know
## Male      32.7850  9.0850      3.5550
## Female    49.5925 13.7425      5.3775
## Other     0.6225  0.1725      0.0675
```

Income

```
chi.inc.choice <- chisq.test(inc.choice)
```

```
## Warning in chisq.test(inc.choice): Chi-squared approximation may be incorrect
```

```
chi.inc.choice.sim <- chisq.test(inc.choice, simulate.p.value = TRUE)
chi.inc.choice.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data: inc.choice
## X-squared = 32.428, df = NA, p-value = 0.2089
```

```
chi.inc.barrier <- chisq.test(inc.barrier)
```

```
## Warning in chisq.test(inc.barrier): Chi-squared approximation may be incorrect
```

```
chi.inc.barrier.sim <- chisq.test(inc.barrier, simulate.p.value = TRUE)
chi.inc.barrier.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data: inc.barrier
## X-squared = 134.43, df = NA, p-value = 0.02049
```

```
chi.inc.barrier2 <- chisq.test(inc.barrier2)
```

```
## Warning in chisq.test(inc.barrier2): Chi-squared approximation may be incorrect
```

```
chi.inc.barrier2.sim <- chisq.test(inc.barrier2, simulate.p.value = TRUE)
chi.inc.barrier2.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data: inc.barrier2
## X-squared = 71.63, df = NA, p-value = 0.1969
```

```
chi.inc.mainconsid <- chisq.test(inc.mainconsid)
```

```
## Warning in chisq.test(inc.mainconsid): Chi-squared approximation may be
## incorrect
```

```
chi.inc.mainconsid.sim <- chisq.test(inc.mainconsid, simulate.p.value =
TRUE)
chi.inc.mainconsid.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data: inc.mainconsid
## X-squared = 107.51, df = NA, p-value = 0.1189
```

```
chi.inc.litter <- chisq.test(inc.litter)
```

```
## Warning in chisq.test(inc.litter): Chi-squared approximation may be incorrect
```

```
chi.inc.litter.sim <- chisq.test(inc.litter, simulate.p.value = TRUE)
chi.inc.litter.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data: inc.litter
## X-squared = 55.067, df = NA, p-value = 0.04298
```

```
chi.inc.attitude <- chisq.test(inc.attitude)
```

```
## Warning in chisq.test(inc.attitude): Chi-squared approximation may be incorrect
```

```
chi.inc.attitude.sim <- chisq.test(inc.attitude, simulate.p.value = TRUE)
chi.inc.attitude.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data: inc.attitude
## X-squared = 68.938, df = NA, p-value = 0.08696
```

```
chi.inc.ocean <- chisq.test(inc.ocean)
```

```
## Warning in chisq.test(inc.ocean): Chi-squared approximation may be incorrect
```

```
chi.inc.ocean.sim <- chisq.test(inc.ocean, simulate.p.value = TRUE)
chi.inc.ocean.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data: inc.ocean
## X-squared = 32.647, df = NA, p-value = 0.6237
```

```
chi.inc.actions <- chisq.test(inc.actions)
```

```
## Warning in chisq.test(inc.actions): Chi-squared approximation may be incorrect
```

```
chi.inc.actions.sim <- chisq.test(inc.actions, simulate.p.value = TRUE)
chi.inc.actions.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data: inc.actions
## X-squared = 39.436, df = NA, p-value = 0.3228
```

```
chi.inc.attplast <- chisq.test(inc.attplast)
```

```
## Warning in chisq.test(inc.attplast): Chi-squared approximation may be incorrect
```

```
chi.inc.attplast.sim <- chisq.test(inc.attplast, simulate.p.value = TRUE)
chi.inc.attplast.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data: inc.attplast
## X-squared = 36.308, df = NA, p-value = 0.1224
```

```
chi.inc.zerow <- chisq.test(inc.zerow)
```

```
## Warning in chisq.test(inc.zerow): Chi-squared approximation may be incorrect
```

```
chi.inc.zerow.sim <- chisq.test(inc.zerow, simulate.p.value = TRUE)
chi.inc.zerow.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data: inc.zerow
## X-squared = 70.898, df = NA, p-value = 0.008496
```

```
chi.inc.bottpurchase <- chisq.test(inc.bottpurchase)
```

```
## Warning in chisq.test(inc.bottpurchase): Chi-squared approximation may be
## incorrect
```

```
chi.inc.bottpurchase.sim <- chisq.test(inc.bottpurchase, simulate.p.value =
TRUE)
chi.inc.bottpurchase.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data: inc.bottpurchase
## X-squared = 74.086, df = NA, p-value = 0.05047
```

```
chi.inc.bottreuse <- chisq.test(inc.bottreuse)
```

```
## Warning in chisq.test(inc.bottreuse): Chi-squared approximation may be incorrect
```

```
chi.inc.bottreuse.sim <- chisq.test(inc.bottreuse, simulate.p.value = TRUE)
chi.inc.bottreuse.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data: inc.bottreuse
## X-squared = 41.092, df = NA, p-value = 0.2689
```

```
chi.inc.bottdisp <- chisq.test(inc.bottdisp)
```

```
## Warning in chisq.test(inc.bottdisp): Chi-squared approximation may be incorrect
```

```
chi.inc.bottdisp.sim <- chisq.test(inc.bottdisp, simulate.p.value = TRUE)
chi.inc.bottdisp.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data: inc.bottdisp
## X-squared = 91.26, df = NA, p-value = 0.1074
```

```
chi.inc.tubspurchase <- chisq.test(inc.tubspurchase)
```

```
## Warning in chisq.test(inc.tubspurchase): Chi-squared approximation may be
## incorrect
```

```
chi.inc.tubspurchase.sim <- chisq.test(inc.tubspurchase, simulate.p.value =
TRUE)
chi.inc.tubspurchase.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data: inc.tubspurchase
## X-squared = 62.136, df = NA, p-value = 0.2009
```

```
chi.inc.tubreuse <- chisq.test(inc.tubreuse)
```

```
## Warning in chisq.test(inc.tubreuse): Chi-squared approximation may be incorrect
```

```
chi.inc.tubreuse.sim <- chisq.test(inc.tubreuse, simulate.p.value = TRUE)
chi.inc.tubreuse.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data: inc.tubreuse
## X-squared = 40.216, df = NA, p-value = 0.2914
```

```
chi.inc.tubdisp <- chisq.test(inc.tubdisp)
```

```
## Warning in chisq.test(inc.tubdisp): Chi-squared approximation may be incorrect
```

```
chi.inc.tubdisp.sim <- chisq.test(inc.tubdisp, simulate.p.value = TRUE)
chi.inc.tubdisp.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data: inc.tubdisp
## X-squared = 72.229, df = NA, p-value = 0.4398
```

```
chi.inc.filmpurchase <- chisq.test(inc.filmpurchase)
```

```
## Warning in chisq.test(inc.filmpurchase): Chi-squared approximation may be
## incorrect
```

```
chi.inc.filmpurchase.sim <- chisq.test(inc.filmpurchase, simulate.p.value =
TRUE)
chi.inc.filmpurchase.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data: inc.filmpurchase
## X-squared = 52.761, df = NA, p-value = 0.5192
```

```
chi.inc.filmreuse <- chisq.test(inc.filmreuse)
```

```
## Warning in chisq.test(inc.filmreuse): Chi-squared approximation may be incorrect
```

```
chi.inc.filmreuse.sim <- chisq.test(inc.filmreuse, simulate.p.value = TRUE)
chi.inc.filmreuse.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data: inc.filmreuse
## X-squared = 45.268, df = NA, p-value = 0.1434
```

```
chi.inc.filmdisp <- chisq.test(inc.filmdisp)
```

```
## Warning in chisq.test(inc.filmdisp): Chi-squared approximation may be incorrect
```

```
chi.inc.filmdisp.sim <- chisq.test(inc.filmdisp, simulate.p.value = TRUE)
chi.inc.filmdisp.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data: inc.filmdisp
## X-squared = 102.17, df = NA, p-value = 0.04648
```

```
chi.inc.bagpurchase <- chisq.test(inc.bagpurchase)
```

```
## Warning in chisq.test(inc.bagpurchase): Chi-squared approximation may be  
## incorrect
```

```
chi.inc.bagpurchase.sim <- chisq.test(inc.bagpurchase, simulate.p.value =  
TRUE)  
chi.inc.bagpurchase.sim
```

```
##  
## Pearson's Chi-squared test with simulated p-value (based on 2000  
## replicates)  
##  
## data: inc.bagpurchase  
## X-squared = 64.944, df = NA, p-value = 0.1454
```

```
chi.inc.bagreuse <- chisq.test(inc.bagreuse)
```

```
## Warning in chisq.test(inc.bagreuse): Chi-squared approximation may be incorrect
```

```
chi.inc.bagreuse.sim <- chisq.test(inc.bagreuse, simulate.p.value = TRUE)  
chi.inc.bagreuse.sim
```

```
##  
## Pearson's Chi-squared test with simulated p-value (based on 2000  
## replicates)  
##  
## data: inc.bagreuse  
## X-squared = 35.784, df = NA, p-value = 0.4673
```

```
chi.inc.bagdisp <- chisq.test(inc.bagdisp)
```

```
## Warning in chisq.test(inc.bagdisp): Chi-squared approximation may be incorrect
```

```
chi.inc.bagdisp.sim <- chisq.test(inc.bagdisp, simulate.p.value = TRUE)  
chi.inc.bagdisp.sim
```

```
##  
## Pearson's Chi-squared test with simulated p-value (based on 2000  
## replicates)  
##  
## data: inc.bagdisp  
## X-squared = 76.557, df = NA, p-value = 0.3153
```

Simulated residuals for 'income'

```
chi.inc.choice.sim$residuals
```

```

##
## Always As often as they can If cheaper or preferred
## Less than £12,000 -0.37766308 -1.03566439 0.80802624
## £12,000-14,999 -1.23715763 0.11531133 0.65975066
## £15,000-19,999 2.88112836 -0.83163930 -0.99898416
## £20,000-24,999 -0.56086957 0.22082242 0.45449611
## £25,000-34,999 -0.80968221 0.76153846 -0.27811415
## £35,000-49,999 1.10271145 0.07635417 -0.64754177
## £50,000-74,999 -1.39568867 0.74420841 -0.29065918
## £100,000-149,000 0.11795356 0.92912283 -0.76135089
## £150,000 or more 0.79618656 -0.05547002 -0.14855627
## Prefer not to say -1.23715763 -0.67090230 1.71254427
##
## Rarely or never
## Less than £12,000 1.60579308
## £12,000-14,999 -0.06900656
## £15,000-19,999 0.58655573
## £20,000-24,999 -0.78065376
## £25,000-34,999 -0.45573272
## £35,000-49,999 -0.29319774
## £50,000-74,999 0.34020691
## £100,000-149,000 -1.09544512
## £150,000 or more -0.54772256
## Prefer not to say -0.06900656

```

```
chi.inc.barrier.sim$residuals
```

```

##
## Council collection Unclear information Difficult transport
## Less than £12,000 -0.884914987 0.192046141 1.521482118
## £12,000-14,999 -1.074983750 2.716886942 -0.794247753
## £15,000-19,999 -0.261403152 -0.244807834 0.505738954
## £20,000-24,999 -0.061870650 -1.172194212 -0.299239335
## £25,000-34,999 -0.762959385 -1.782308983 -0.014944064
## £35,000-49,999 1.315677341 0.355457094 0.457367532
## £50,000-74,999 0.573414639 0.009466031 -0.261046282
## £100,000-149,000 0.652753366 0.330200330 -1.113552873
## £150,000 or more -0.139875721 -0.787400787 -0.556776436
## Prefer not to say 0.334831004 0.796825499 -0.794247753
##
## No local facilities No support Ends up in landfills
## Less than £12,000 -0.352107358 -1.374772708 -0.249805119
## £12,000-14,999 0.351382111 -1.122497216 -0.203965025
## £15,000-19,999 -0.644200536 1.285823531 -0.525264770
## £20,000-24,999 0.984428453 -1.438749457 -0.921421969
## £25,000-34,999 1.617384947 1.738896398 0.825595780
## £35,000-49,999 0.135724179 -1.849324201 -0.107827614
## £50,000-74,999 -1.480360853 0.685160160 1.187210890
## £100,000-149,000 -0.338061702 0.329983165 1.462252310
## £150,000 or more -0.591607978 4.289781139 -0.574456265
## Prefer not to say -0.287494454 0.659244397 -0.861916720
##
## Forgetting Recycling a hassle Household disagrees
## Less than £12,000 -0.385758375 0.927105069 0.655562281

```

##	£12,000-14,999	0.188982237	0.358568583	-0.591607978
##	£15,000-19,999	-0.472455591	0.338648106	1.366332712
##	£20,000-24,999	0.663488803	-0.139875721	0.560473402
##	£25,000-34,999	-0.693375245	-1.140175425	-0.806225775
##	£35,000-49,999	0.573539335	0.072547625	-0.974679434
##	£50,000-74,999	1.304372987	-0.117851130	0.583333333
##	£100,000-149,000	-1.000000000	-0.632455532	-0.447213595
##	£150,000 or more	-0.500000000	-0.316227766	-0.223606798
##	Prefer not to say	-0.566946710	0.358568583	-0.591607978
##				
##		Recycling not important	Other	
##	Less than £12,000	-0.724568837	-0.648074070	
##	£12,000-14,999	-0.591607978	3.250494468	
##	£15,000-19,999	0.239460372	0.466156183	
##	£20,000-24,999	1.879234349	0.796186563	
##	£25,000-34,999	-0.806225775	-0.721110255	
##	£35,000-49,999	-0.974679434	-0.871779789	
##	£50,000-74,999	-0.750000000	-0.670820393	
##	£100,000-149,000	-0.447213595	-0.400000000	
##	£150,000 or more	4.248529157	-0.200000000	
##	Prefer not to say	1.098700531	-0.529150262	
##				
##		Already doing everything		
##	Less than £12,000	1.232410072		
##	£12,000-14,999	-0.996246087		
##	£15,000-19,999	0.007509393		
##	£20,000-24,999	0.954976128		
##	£25,000-34,999	1.686178632		
##	£35,000-49,999	-1.163816595		
##	£50,000-74,999	-1.347593697		
##	£100,000-149,000	-0.185434530		
##	£150,000 or more	-0.754983444		
##	Prefer not to say	0.005006262		

```
chi.inc.barrier2.sim$residuals
```

##			
##		Limited alternatives	No SUP-free alternatives
##	Less than £12,000	-0.79698506	-0.30962614
##	£12,000-14,999	-0.11952286	-0.79942206
##	£15,000-19,999	-1.10890654	0.71401372
##	£20,000-24,999	-0.73046210	-1.20742058
##	£25,000-34,999	0.38005848	-0.91752668
##	£35,000-49,999	0.94311913	0.70918346
##	£50,000-74,999	0.27498597	0.46485995
##	£100,000-149,000	-0.84327404	0.32539569
##	£150,000 or more	-0.94868330	1.24735013
##	Prefer not to say	2.27093436	0.43045803
##			
##		Alternatives expensive	Limited functioning
##	Less than £12,000	0.02510482	-0.04694579
##	£12,000-14,999	1.25037809	1.37386650
##	£15,000-19,999	0.16740035	-0.05749662
##	£20,000-24,999	0.39181198	0.71537113

##	£25,000-34,999	-1.21835510	-0.91931927
##	£35,000-49,999	0.21151086	-0.15061726
##	£50,000-74,999	-1.15204422	0.29241357
##	£100,000-149,000	1.41004798	0.35228194
##	£150,000 or more	0.16269784	-0.62449980
##	Prefer not to say	-0.38946203	-1.04704363
##			
##		Forgetting reusables	Reducing not important
##	Less than £12,000	2.34216018	-1.16833214
##	£12,000-14,999	-0.47809144	0.09434564
##	£15,000-19,999	-0.91634193	0.66566087
##	£20,000-24,999	-0.27975144	1.23088053
##	£25,000-34,999	1.66641024	-0.53076923
##	£35,000-49,999	-0.58038100	-0.29905384
##	£50,000-74,999	0.23570226	0.44445780
##	£100,000-149,000	-0.47434165	-0.72111026
##	£150,000 or more	-0.63245553	2.41294585
##	Prefer not to say	-1.67332005	-0.95393920
##			
##		No barriers	
##	Less than £12,000	0.39036003	
##	£12,000-14,999	-1.67332005	
##	£15,000-19,999	0.27888668	
##	£20,000-24,999	1.58525817	
##	£25,000-34,999	2.10493925	
##	£35,000-49,999	-1.66859538	
##	£50,000-74,999	-0.23570226	
##	£100,000-149,000	-0.47434165	
##	£150,000 or more	-0.63245553	
##	Prefer not to say	-0.47809144	

chi.inc.mainconsid.sim\$residuals

##				
##		Value for money	Price	Quality Deals/discounts
##	Less than £12,000	-0.140035153	0.568716872	0.578997492
##	£12,000-14,999	0.232141241	-0.303174175	-1.273200283
##	£15,000-19,999	-0.171507335	-1.094369226	0.574820381
##	£20,000-24,999	-0.996127870	1.750047063	-0.037721677
##	£25,000-34,999	0.643243438	0.673039197	-0.721401123
##	£35,000-49,999	0.082018973	0.132773740	0.313034232
##	£50,000-74,999	0.714013720	-2.092536374	0.031782086
##	£100,000-149,000	0.110003820	-0.446752313	1.854846232
##	£150,000 or more	-1.090871211	0.030460385	0.127920430
##	Prefer not to say	-0.114338223	0.848120160	-1.273200283
##				
##		Use-by-dates/longevity	Convenience	
##	Less than £12,000	-0.387649466	-0.048795004	
##	£12,000-14,999	0.020203051	1.553797192	
##	£15,000-19,999	-0.811489211	0.338648106	
##	£20,000-24,999	0.307363058	-1.072380529	
##	£25,000-34,999	-0.607824440	-1.140175425	
##	£35,000-49,999	-0.404671964	0.072547625	
##	£50,000-74,999	0.338648106	-0.117851130	

##	£100,000-149,000	0.587974732	-0.632455532	
##	£150,000 or more	-0.374165739	-0.316227766	
##	Prefer not to say	2.040508140	1.553797192	
##				
##		Ease of recycling packaging	Sustainability	Brand
##	Less than £12,000	-0.861916720	-1.168332145	-0.648074070
##	£12,000-14,999	0.370678563	0.094345635	1.360672103
##	£15,000-19,999	-1.324235738	1.364517429	1.726037760
##	£20,000-24,999	-0.333208145	0.413019714	-0.678232998
##	£25,000-34,999	1.856720923	0.238461538	-0.721110255
##	£35,000-49,999	0.890191098	-0.299053839	0.275298881
##	£50,000-74,999	0.333711906	-0.382440432	-0.670820393
##	£100,000-149,000	-0.938083152	-0.721110255	-0.400000000
##	£150,000 or more	-0.469041576	-0.360555128	-0.200000000
##	Prefer not to say	-0.435144401	0.094345635	-0.529150262
##				
##		Ethics	Other	
##	Less than £12,000	-0.724568837	-0.458257569	
##	£12,000-14,999	1.098700531	-0.374165739	
##	£15,000-19,999	0.239460372	3.002234617	
##	£20,000-24,999	-0.758287544	-0.479583152	
##	£25,000-34,999	-0.806225775	-0.509901951	
##	£35,000-49,999	0.051298918	-0.616441400	
##	£50,000-74,999	-0.750000000	-0.474341649	
##	£100,000-149,000	-0.447213595	-0.282842712	
##	£150,000 or more	4.248529157	-0.141421356	
##	Prefer not to say	1.098700531	-0.374165739	

chi.inc.litter.sim\$residuals

##			
##		Strongly agree	Agree Neither agree nor disagree
##	Less than £12,000	-0.03871384	-0.72981761
##	£12,000-14,999	-0.31897079	0.78990545
##	£15,000-19,999	-0.23898862	0.29398737
##	£20,000-24,999	-0.64904767	-0.14596009
##	£25,000-34,999	0.74013747	-1.10260849
##	£35,000-49,999	0.02267480	0.76063822
##	£50,000-74,999	0.12183699	0.18153816
##	£100,000-149,000	-0.34973152	0.98994949
##	£150,000 or more	0.96556312	-0.48711800
##	Prefer not to say	0.25575135	-0.69487923
##			
##		Disagree Strongly disagree	
##	Less than £12,000	1.26566376	5.52405993
##	£12,000-14,999	0.58797473	-0.52915026
##	£15,000-19,999	0.65924440	-0.79372539
##	£20,000-24,999	-0.95916630	-0.67823300
##	£25,000-34,999	-0.03922323	-0.72111026
##	£35,000-49,999	-0.42177569	-0.87177979
##	£50,000-74,999	0.10540926	-0.67082039
##	£100,000-149,000	-0.56568542	-0.40000000
##	£150,000 or more	-0.28284271	-0.20000000
##	Prefer not to say	-0.74833148	-0.52915026

`chi.inc.attitude.sim$residuals`

```
##
##          1 (Not concerned)          2          3          4
## Less than £12,000      0.69190966 -0.75907212  1.78085215  0.12100094
## £12,000-14,999        0.08001323  0.50709255 -0.51354476  0.39371282
## £15,000-19,999        0.84741281 -1.21138777  0.21348508  0.44311125
## £20,000-24,999        0.50791640  0.46156633 -0.32927988 -0.48146404
## £25,000-34,999       -0.80597837 -0.37210420  1.15650538  0.16555301
## £35,000-49,999       -0.94041797 -0.41039134 -1.35790842  1.37746044
## £50,000-74,999       -0.59529188  1.83333333 -0.28519237 -0.77205029
## £100,000-149,000     -0.07698004 -0.89442719 -1.28062485 -1.12359501
## £150,000 or more     -0.51961524 -0.44721360 -0.64031242 -0.85440037
## Prefer not to say      0.80740619  1.35224681  0.66701791 -0.93340905
##
##          5          6 7 (Very concerned)
## Less than £12,000 -1.14747553 -1.60008503      1.39505313
## £12,000-14,999   -1.05490856 -0.46467017      1.44239994
## £15,000-19,999   -0.69737244  0.06060915      0.34353690
## £20,000-24,999    1.35054019 -0.96149470     -0.68692212
## £25,000-34,999   -1.25205364  1.37872373      0.01001671
## £35,000-49,999    0.07305496  1.03007409     -0.58274843
## £50,000-74,999    0.04886629  1.47411528     -0.99152000
## £100,000-149,000  3.01580631 -1.49666295      0.14446302
## £150,000 or more  0.80546380  1.92428094     -0.83066239
## Prefer not to say  0.71507225 -1.47482272     -0.37766308
```

`chi.inc.ocean.sim$residuals`

```
##
##          Always Most of the time  Sometimes  Rarely
## Less than £12,000  1.41952461   -0.27840467 -0.43643578 -0.51793240
## £12,000-14,999    1.44807365   -1.21564888 -0.26726124  0.39036003
## £15,000-19,999    0.58240886    0.64735774 -0.26726124 -0.79698506
## £20,000-24,999   -0.12515437   -0.56674863  1.04257207 -0.34262414
## £25,000-34,999   -0.93533860    0.67447108 -0.19611614  0.42966892
## £35,000-49,999   -0.32105263    0.95383309 -0.48666426  0.17770466
## £50,000-74,999   -0.77803358   -0.49699954  0.10540926  0.86602540
## £100,000-149,000 -0.87177979    0.41184388  0.35355339 -0.90369611
## £150,000 or more  1.85826744   -1.01980390  0.70710678 -0.77459667
## Prefer not to say -1.15325626   -0.47439956  0.26726124  0.87831007
##
##          Never
## Less than £12,000  1.65788583
## £12,000-14,999    1.65922428
## £15,000-19,999    0.19709018
## £20,000-24,999   -1.39821315
## £25,000-34,999   -0.81393408
## £35,000-49,999   -0.68439031
## £50,000-74,999    0.06327138
## £100,000-149,000  0.38805700
## £150,000 or more  -0.41231056
## Prefer not to say -0.17417271
```

chi.inc.actions.sim\$residuals

```
##
##
##      Yes, definitely Yes, probably No, probably not
## Less than £12,000      0.541261908 -0.905481383      0.698871896
## £12,000-14,999      0.019030844 -0.101189633      1.147016931
## £15,000-19,999      -0.711542126      1.261223938      -0.681101344
## £20,000-24,999      0.165798925 -0.632643564      1.373814408
## £25,000-34,999      -0.572557699      0.435483168      -1.518408215
## £35,000-49,999      1.351500278 -0.214139225      -1.458898329
## £50,000-74,999      0.006254889 -0.752352332      1.437871399
## £100,000-149,000      -1.124503020      1.215605337      -0.548994853
## £150,000 or more      -0.352456170      0.788696320      -0.655743852
## Prefer not to say      -0.298149895 -0.374675127      0.570626514
##
##      No, definitely not I don't know
## Less than £12,000      0.786259158 -0.312411160
## £12,000-14,999      -0.877496439 -0.953939201
## £15,000-19,999      0.203229695 -1.430908802
## £20,000-24,999      -0.235613739 -0.404841106
## £25,000-34,999      1.312899956      1.776923077
## £35,000-49,999      -0.062254302 -0.935338602
## £50,000-74,999      -0.213496623      0.444457799
## £100,000-149,000      -0.663324958      0.665640235
## £150,000 or more      -0.331662479 -0.360555128
## Prefer not to say      -0.877496439      2.190915309
```

chi.inc.bottpurchase.sim\$residuals

```
##
##
##      None      1-2      3-5      6-10      11-15
## Less than £12,000 0.65924440 0.16215121 -0.28525727 0.80000804 -0.70445236
## £12,000-14,999 0.17457431 1.74698011 -1.10360912 -0.95783701 -0.28614629
## £15,000-19,999 -0.64737974 1.16734438 -1.32890211 -0.77769335 0.58240886
## £20,000-24,999 0.52777905 -0.44214826 -0.10444377 1.19635659 -0.80166446
## £25,000-34,999 -0.44835883 -1.13975923 0.85774649 0.76734280 0.33723092
## £35,000-49,999 1.80136401 -0.98589554 1.09794495 -0.81607254 0.73157895
## £50,000-74,999 -1.16189500 -0.61451258 -0.27687249 1.62027785 0.58993755
## £100,000-149,000 -0.69282032 0.22213299 1.14030632 -0.55798867 -0.87177979
## £150,000 or more -0.34641016 -0.31611233 -0.29371526 -0.86023253 -0.43588989
## Prefer not to say -0.91651514 0.77822959 0.20243718 -1.39721179 -0.28614629
##
##      16+ I don't know
## Less than £12,000 -1.21243557 -0.04879500
## £12,000-14,999 0.02020305 0.35856858
## £15,000-19,999 1.88225091 0.33864811
## £20,000-24,999 -0.48074735 -0.13987572
## £25,000-34,999 -1.34907376 0.61394061
## £35,000-49,999 0.20846738 -1.37840488
## £50,000-74,999 -0.45817097 -0.11785113
## £100,000-149,000 -0.74833148 -0.63245553
## £150,000 or more 4.97105910 -0.31622777
## Prefer not to say 0.02020305 1.55379719
```

chi.inc.bottreuse.sim\$residuals

```
##
##               Never          Once    2-4 times    5-10 times
## Less than £12,000  0.199605580 -1.113014963 -0.148083612 -0.402628166
## £12,000-14,999    -0.435104465  0.642034105 -0.342762538  0.005006262
## £15,000-19,999    -1.549779305 -0.122513754 -0.292291031 -0.659992173
## £20,000-24,999     0.992144590 -1.303087446 -0.995684148  1.345559411
## £25,000-34,999     0.582602597 -0.198008735 -0.188028722  0.951460274
## £35,000-49,999     0.138855856  0.129899974  0.502953334  0.355526218
## £50,000-74,999    -0.349407054  1.678969742  0.390468369  0.232003310
## £100,000-149,000  -0.498448296 -0.393892771  0.810014834 -0.847700709
## £150,000 or more   1.530948339 -0.812403840  0.625120143 -0.754983444
## Prefer not to say  0.462018143  1.107276210  0.322795788 -1.496872261
##
##               More often
## Less than £12,000  1.376866249
## £12,000-14,999    0.262745600
## £15,000-19,999    2.547770862
## £20,000-24,999    0.384778860
## £25,000-34,999   -0.951370010
## £35,000-49,999   -1.210483372
## £50,000-74,999   -1.923918148
## £100,000-149,000  0.524218652
## £150,000 or more  -0.877496439
## Prefer not to say -0.598715384
```

chi.inc.bottdisp.sim\$residuals

```
##
##               General waste bin Recycling bin Recycling centre
## Less than £12,000  2.473651272 -0.415774888 -0.048795004
## £12,000-14,999    0.807406194  0.008347839  0.358568583
## £15,000-19,999    -0.607373128 -1.204871387  0.338648106
## £20,000-24,999     0.507916397 -0.280054532 -0.139875721
## £25,000-34,999    -0.272217861  0.514553669 -1.140175425
## £35,000-49,999    -0.940417974  0.592832673  1.523500125
## £50,000-74,999    -0.595291885  0.510326958 -1.060660172
## £100,000-149,000  -0.076980036 -0.309208273 -0.632455532
## £150,000 or more   -0.519615242 -0.154604137  2.846049894
## Prefer not to say  -0.647379741  0.634435742 -0.836660027
##
##               Specialist waste collection    Landfill
## Less than £12,000  -0.857321410 -0.724568837
## £12,000-14,999    -0.700000000 -0.591607978
## £15,000-19,999     0.854761905  2.493205051
## £20,000-24,999     1.331894928 -0.758287544
## £25,000-34,999    -0.953939201  0.434121571
## £35,000-49,999    -0.286146290 -0.974679434
## £50,000-74,999    -0.887411967  0.583333333
## £100,000-149,000   3.250494468 -0.447213595
## £150,000 or more   -0.264575131 -0.223606798
## Prefer not to say  -0.700000000 -0.591607978
```

```
##
##          Deposit return scheme Indefinite storage          Other
## Less than £12,000          -0.648074070          -1.296148140  1.723921333
## £12,000-14,999          -0.529150262          -0.113389342 -0.374165739
## £15,000-19,999          1.726037760          3.452075520 -0.561248608
## £20,000-24,999          0.796186563          0.117953565 -0.479583152
## £25,000-34,999          -0.721110255          -0.748845265  1.451259400
## £35,000-49,999          -0.871779789          -1.170020243 -0.616441400
## £50,000-74,999          0.819891592          -0.596284794 -0.474341649
## £100,000-149,000          -0.400000000          0.450000000 -0.282842712
## £150,000 or more          -0.200000000          -0.400000000 -0.141421356
## Prefer not to say          -0.529150262          -0.113389342 -0.374165739
##
##          I don't know
## Less than £12,000  2.762029964
## £12,000-14,999  -0.264575131
## £15,000-19,999  -0.396862697
## £20,000-24,999  -0.339116499
## £25,000-34,999  -0.360555128
## £35,000-49,999  -0.435889894
## £50,000-74,999  -0.335410197
## £100,000-149,000 -0.200000000
## £150,000 or more -0.100000000
## Prefer not to say -0.264575131
```

```
chi.inc.tubspurchase.sim$residuals
```

```
##
##          None          1-2          3-5          6-10
## Less than £12,000  1.550115203 -0.100965358  0.770338613 -0.644357105
## £12,000-14,999  0.174574312  1.251115904 -0.003160698 -0.799422060
## £15,000-19,999  0.807406194 -0.002424643 -1.374376719  0.987320408
## £20,000-24,999 -1.174734012  0.732080616 -0.356328786 -0.567727556
## £25,000-34,999 -1.248999600  0.523085302 -0.136839764 -0.015041421
## £35,000-49,999  0.476831649 -1.439325161  0.542927221  1.455692360
## £50,000-74,999  0.559430928 -0.903696114 -0.769773022  0.464859948
## £100,000-149,000 -0.692820323 -0.153960072  0.953315891 -1.301582747
## £150,000 or more -0.346410162 -0.076980036  0.476657946 -0.921954446
## Prefer not to say -0.916515139  0.887419420  0.945048614 -0.799422060
##
##          11-15          16+ I don't know
## Less than £12,000 -0.598856327 -1.168332145 -0.048795004
## £12,000-14,999  -0.021055872 -0.953939201 -0.836660027
## £15,000-19,999 -1.201354486  2.762230545  0.338648106
## £20,000-24,999  0.364144476  0.413019714  0.792629087
## £25,000-34,999  0.633482229 -1.300000000  0.613940614
## £35,000-49,999 -0.643281627 -0.299053839 -0.652928625
## £50,000-74,999  2.622853072 -0.382440432 -0.117851130
## £100,000-149,000 0.779920420  0.665640235 -0.632455532
## £150,000 or more -0.538516481  2.412945854 -0.316227766
## Prefer not to say -1.424780685 -0.953939201  0.358568583
```

chi.inc.tubreuse.sim\$residuals

```
##
##               Never          Once    2-4 times    5-10 times
## Less than £12,000 -0.555158198 -0.628961314  0.568716872 -0.036469840
## £12,000-14,999   -0.614596076  0.667017910  0.080590603 -0.526069167
## £15,000-19,999    0.126629375 -1.754119370 -1.094369226  0.286194861
## £20,000-24,999   -0.005663402  0.591782719 -0.046408434 -0.646626582
## £25,000-34,999    0.735078553 -1.009235031 -1.016598954  1.988414721
## £35,000-49,999   -1.054514924  1.508389036  1.064519282 -1.813450452
## £50,000-74,999    1.197684849  0.180427826  0.329205542  0.968913362
## £100,000-149,000 -0.921865536  0.281112771  1.076266935  0.446441872
## £150,000 or more  1.779712631  0.921425195 -0.984885780  0.551487018
## Prefer not to say  0.353271761  0.076736574 -0.303174175 -0.526069167
##
##               More often
## Less than £12,000  0.254198839
## £12,000-14,999    0.312909073
## £15,000-19,999    1.575607807
## £20,000-24,999    0.136859845
## £25,000-34,999   -0.368771568
## £35,000-49,999    0.159233072
## £50,000-74,999   -1.767049811
## £100,000-149,000 -0.719168129
## £150,000 or more  -1.195826074
## Prefer not to say  0.312909073
```

chi.inc.tubdisp.sim\$residuals

```
##
##               General waste bin Recycling bin Recycling centre
## Less than £12,000 -0.675541701  0.391976918 -0.598856327
## £12,000-14,999   -0.008151391 -0.200355135 -1.424780685
## £15,000-19,999   -1.506648855 -0.040331228 -0.733446215
## £20,000-24,999    0.352959465  0.149209746 -0.183441202
## £25,000-34,999   -0.352907677  0.108833339  1.663534634
## £35,000-49,999    0.163274330  0.143722037 -0.643281627
## £50,000-74,999    2.033457233 -0.356621337  0.961943475
## £100,000-149,000 -0.237232101 -0.151454246  1.708397111
## £150,000 or more  0.150965882 -0.764155514 -0.538516481
## Prefer not to say  0.399418182  0.059846339 -0.021055872
##
##               Specialist waste collection    Landfill
## Less than £12,000  0.659244397 -0.561248608
## £12,000-14,999    1.265663763 -0.458257569
## £15,000-19,999    0.807406194  0.767399581
## £20,000-24,999   -1.174734012  1.115146055
## £25,000-34,999   -1.248999600 -0.624499800
## £35,000-49,999    0.476831649  0.569548914
## £50,000-74,999   -1.161895004 -0.580947502
## £100,000-149,000  0.750555350 -0.346410162
## £150,000 or more  2.540341184 -0.173205081
## Prefer not to say -0.916515139 -0.458257569
```

```
##
##      Deposit return scheme Indefinite storage      Other
## Less than £12,000      -0.648074070      -0.195238095  2.641949651
## £12,000-14,999      -0.529150262      1.201416398 -0.700000000
## £15,000-19,999      1.726037760      2.093730518 -0.097619048
## £20,000-24,999      -0.678232998      0.077352678 -0.897217922
## £25,000-34,999      -0.721110255      -0.196861827 -0.953939201
## £35,000-49,999      1.422377550      -0.700912402 -0.286146290
## £50,000-74,999      -0.670820393      -1.713662806  0.239460372
## £100,000-149,000      -0.400000000      -0.524631390 -0.529150262
## £150,000 or more      -0.200000000      0.894959430 -0.264575131
## Prefer not to say      -0.529150262      -0.548219133  0.728571429
##
##      I don't know
## Less than £12,000 -0.793725393
## £12,000-14,999      0.894959430
## £15,000-19,999      -0.972111105
## £20,000-24,999      0.373196145
## £25,000-34,999      1.381377982
## £35,000-49,999      -0.131122014
## £50,000-74,999      -0.821583836
## £100,000-149,000      -0.489897949
## £150,000 or more      -0.244948974
## Prefer not to say      0.894959430
```

```
chi.inc.filmpurchase.sim$residuals
```

```
##
##      None      1-2      3-5      6-10
## Less than £12,000 0.659244397 0.397326668 0.332485260 -0.831746065
## £12,000-14,999 2.356753215 0.461880215 0.499601715 -1.034676886
## £15,000-19,999 1.534799161 -0.063233601 -0.961562205 -0.426078282
## £20,000-24,999 -1.174734012 0.109393207 -0.008009260 0.001387017
## £25,000-34,999 -1.248999600 0.629436634 0.035154137 0.341790823
## £35,000-49,999 -0.847700709 -0.991239825 1.416536139 0.546014906
## £50,000-74,999 -0.301232038 -0.146385011 -1.005472277 0.361103547
## £100,000-149,000 -0.692820323 -0.196396101 -0.398357283 1.166493877
## £150,000 or more -0.346410162 0.174574312 -0.199178641 -0.122293713
## Prefer not to say 0.174574312 0.049487166 -0.184784196 0.032000316
##
##      11-15      16+ I don't know
## Less than £12,000 0.941386632 -1.374772708 -0.231626410
## £12,000-14,999 0.163411434 -1.122497216 -0.916515139
## £15,000-19,999 -0.864466659 2.473651272 1.534799161
## £20,000-24,999 0.243178965 0.646394684 -0.323477482
## £25,000-34,999 -0.475203683 -0.875985404 0.352281938
## £35,000-49,999 -0.885335622 -0.227109990 -0.847700709
## £50,000-74,999 2.202053238 -0.720296578 -0.301232038
## £100,000-149,000 -0.448358831 0.329983165 -0.692820323
## £150,000 or more -0.624499800 1.932758535 -0.346410162
## Prefer not to say -0.441816099 -0.231626410 1.265663763
```

chi.inc.filmreuse.sim\$residuals

```
##
##               Never      Once    2-4 times  5-10 times  More often
## Less than £12,000 -0.35757681 -0.58093886  0.97850802 -0.23162641  1.13546718
## £12,000-14,999   0.11809628 -1.16578444  0.62750029  1.26566376 -0.04879500
## £15,000-19,999   -0.51995168 -0.29663198  0.51263002  0.08001323  1.71595763
## £20,000-24,999   -0.02687343  0.79462739 -1.28812863  0.52777905  0.20938142
## £25,000-34,999    1.68262848 -2.37151969 -0.38497419  0.35228194 -0.68030913
## £35,000-49,999   -0.57345378  2.32426613 -0.39336604 -0.84770071 -1.68819430
## £50,000-74,999    0.08733338  0.21680564 -0.84186986  0.55943093  0.24056261
## £100,000-149,000 -0.79415236 -0.72444412  2.61278906 -0.69282032  0.51639778
## £150,000 or more -0.23434004  0.18659924  0.62598071 -0.34641016 -0.38729833
## Prefer not to say 0.36413020  0.90856510 -0.91553321 -0.91651514 -1.02469508
```

chi.inc.filmdisp.sim\$residuals

```
##
##               General waste bin Recycling bin Recycling centre
## Less than £12,000 -0.53555104  0.10939321  0.16092346
## £12,000-14,999   -0.35988168  1.00878132 -0.17417271
## £15,000-19,999   -0.11415602 -0.65413164  0.19709018
## £20,000-24,999   -0.08604423  0.43656158  0.03218393
## £25,000-34,999   -0.07666866  0.58988123 -0.14126129
## £35,000-49,999    0.09160383 -0.11480757 -0.12797542
## £50,000-74,999    0.21748756  0.82371258 -0.65983014
## £100,000-149,000  0.43000658 -1.39704657  1.60073513
## £150,000 or more -0.39929183 -0.95916630 -0.41231056
## Prefer not to say 0.80102697 -0.96149470 -0.17417271
```

```
##
##               Specialist waste collection   Landfill
## Less than £12,000 -0.79372539 -0.56124861
## £12,000-14,999   0.89495943 -0.45825757
## £15,000-19,999   2.11395589  0.76739958
## £20,000-24,999   -0.83066239 -0.58736701
## £25,000-34,999   -0.88317609 -0.62449980
## £35,000-49,999   -0.13112201 -0.75498344
## £50,000-74,999   -0.82158384 -0.58094750
## £100,000-149,000 -0.48989795  2.54034118
## £150,000 or more  3.83753393  5.60029761
## Prefer not to say -0.64807407 -0.45825757
```

```
##
##               Deposit return scheme Indefinite storage   Other
## Less than £12,000 -0.45825757  1.22049300  0.46615618
## £12,000-14,999   -0.37416574 -0.45825757 -0.64807407
## £15,000-19,999    1.22049300 -0.68738635  1.08526689
## £20,000-24,999   -0.47958315  1.11514606  0.37319614
## £25,000-34,999   -0.50990195 -0.62449980  0.24910095
## £35,000-49,999    1.00577281  0.56954891 -1.06770783
## £50,000-74,999   -0.47434165 -0.58094750 -0.82158384
## £100,000-149,000 -0.28284271 -0.34641016 -0.48989795
## £150,000 or more -0.14142136 -0.17320508 -0.24494897
## Prefer not to say -0.37416574 -0.45825757  0.89495943
```

```
##
## I don't know
## Less than £12,000 2.98591934
## £12,000-14,999 -0.64807407
## £15,000-19,999 -0.97211110
## £20,000-24,999 -0.83066239
## £25,000-34,999 0.24910095
## £35,000-49,999 0.80546380
## £50,000-74,999 -0.82158384
## £100,000-149,000 -0.48989795
## £150,000 or more -0.24494897
## Prefer not to say -0.64807407
```

```
chi.inc.bagpurchase.sim$residuals
```

```
##
## None 1-2 3-5 6-10 11-15
## Less than £12,000 -0.07293968 1.37686625 -0.71299052 -1.41244469 0.43713663
## £12,000-14,999 -1.30028417 1.55493708 1.14701693 0.58096368 0.02020305
## £15,000-19,999 -0.58562417 -0.32376575 -1.83388218 1.73855549 1.88225091
## £20,000-24,999 -0.71245085 0.38477886 0.92412066 -0.12515437 -0.48074735
## £25,000-34,999 0.51713350 0.94504861 -0.24954341 -0.93533860 -1.34907376
## £35,000-49,999 1.04228215 -1.47192686 -0.05947547 -0.32105263 -0.40467196
## £50,000-74,999 -0.60679423 0.11467062 0.98320851 0.58993755 0.33864811
## £100,000-149,000 0.23635158 -1.18519000 1.73848370 -0.87177979 0.58797473
## £150,000 or more -0.86662246 0.26210933 0.86924185 1.85826744 -0.37416574
## Prefer not to say 1.67746583 -1.46017637 -1.15854474 -0.28614629 -0.98994949
##
## 16+ I don't know
## Less than £12,000 -0.91651514 0.30910228
## £12,000-14,999 -0.74833148 -0.70000000
## £15,000-19,999 2.44098601 0.85476190
## £20,000-24,999 1.12597784 0.21733850
## £25,000-34,999 -1.01980390 -0.95393920
## £35,000-49,999 -0.42177569 0.58096368
## £50,000-74,999 0.10540926 -0.88741197
## £100,000-149,000 -0.56568542 -0.52915026
## £150,000 or more -0.28284271 -0.26457513
## Prefer not to say -0.74833148 0.72857143
```

```
chi.inc.bagreuse.sim$residuals
```

```
##
## Never Once 2-4 times 5-10 times More often
## Less than £12,000 0.41293413 -0.28845011 -1.20483856 -0.86681056 1.45236129
## £12,000-14,999 -0.79424775 -0.04558423 0.19204614 0.49692935 -0.10096536
## £15,000-19,999 -0.39938669 0.78632798 -0.16918351 0.59480937 -0.49789780
## £20,000-24,999 -0.29923933 -1.36033593 0.70482376 -0.37007637 0.54908796
## £25,000-34,999 0.48319142 -0.30104712 -0.02588388 -0.69614322 0.42273922
## £35,000-49,999 0.04532471 0.91306309 -0.15938833 0.19194297 -0.50108395
## £50,000-74,999 -0.79652583 0.92140648 -0.45214542 2.18263348 -1.22391858
## £100,000-149,000 -0.21552636 0.18090681 1.18212493 -1.07570575 -0.18856181
## £150,000 or more 1.23927658 -0.66332496 2.14649001 -0.83666003 -1.27279221
## Prefer not to say 1.24228495 -1.18519000 -0.19988476 -0.85833251 0.78990545
```

```

##
##           General waste bin Recycling bin Recycling centre
## Less than £12,000      -0.520010822   0.431137933   -1.171924582
## £12,000-14,999        -0.003160698   0.614726117   -1.424780685
## £15,000-19,999        -1.163663539   -0.654131637    0.202370327
## £20,000-24,999        -0.109734470   1.358874771   -0.183441202
## £25,000-34,999        0.327023843   -1.723378497    0.633482229
## £35,000-49,999        1.310315518   -0.114807570    0.208747018
## £50,000-74,999        0.476822965   -0.108792228    0.408306943
## £100,000-149,000      -1.137289134   1.730669637   -0.148556271
## £150,000 or more      -0.359584064   -0.959166305    3.175390283
## Prefer not to say      0.312909073   -0.173384289   -0.021055872
##
##           Specialist waste collection      Landfill
## Less than £12,000      -0.916515139 -0.458257569
## £12,000-14,999        0.587974732 -0.374165739
## £15,000-19,999        0.659244397  1.220493005
## £20,000-24,999        -0.959166305 -0.479583152
## £25,000-34,999        -0.039223227 -0.509901951
## £35,000-49,999        0.389331411 -0.616441400
## £50,000-74,999        1.159501809 -0.474341649
## £100,000-149,000      -0.565685425  3.252691193
## £150,000 or more      -0.282842712 -0.141421356
## Prefer not to say      -0.748331477 -0.374165739
##
##           Deposit return scheme Indefinite storage      Other
## Less than £12,000      0.786259158      0.096540860  1.019930782
## £12,000-14,999        0.262109326      0.908565096 -1.268857754
## £15,000-19,999        2.482441224      -0.020052045  1.249154994
## £20,000-24,999        -1.124722188      0.147273101 -1.011470135
## £25,000-34,999        -0.359584064      0.368361852  1.162413013
## £35,000-49,999        -1.445683229      -0.949348139 -0.176995003
## £50,000-74,999        0.685436527      -0.764955748 -0.365231050
## £100,000-149,000      -0.663324958      -0.175622816  0.083405766
## £150,000 or more      -0.331662479      0.186599242 -0.479583152
## Prefer not to say      -0.877496439      0.908565096 -1.268857754
##
##           I don't know
## Less than £12,000      1.085266895
## £12,000-14,999        -0.793725393
## £15,000-19,999        0.489254012
## £20,000-24,999        -0.034403123
## £25,000-34,999        0.767335271
## £35,000-49,999        -0.542950570
## £50,000-74,999        -1.006230590
## £100,000-149,000      -0.600000000
## £150,000 or more      -0.300000000
## Prefer not to say      0.466156183

```

Simulated observed and expected values for 'income'

```
chi.inc.choice.sim$observed
```

```
##
##           Always As often as they can If cheaper or preferred
## Less than £12,000      4              17              15
## £12,000-14,999        1              15              10
## £15,000-19,999        15             28              14
## £20,000-24,999         4              25              15
## £25,000-34,999         4              31              14
## £35,000-49,999        12             40              19
## £50,000-74,999         2              27              12
## £100,000-149,000       2              11              3
## £150,000 or more        1              2              1
## Prefer not to say      1              12             13
##
##           Rarely or never
## Less than £12,000      6
## £12,000-14,999        2
## £15,000-19,999        6
## £20,000-24,999         2
## £25,000-34,999         3
## £35,000-49,999         5
## £50,000-74,999         4
## £100,000-149,000       0
## £150,000 or more        0
## Prefer not to say      2
```

```
chi.inc.choice.sim$expected
```

```
##
##           Always As often as they can If cheaper or preferred
## Less than £12,000  4.830          21.84          12.18
## £12,000-14,999    3.220          14.56           8.12
## £15,000-19,999    7.245          32.76          18.27
## £20,000-24,999    5.290          23.92          13.34
## £25,000-34,999    5.980          27.04          15.08
## £35,000-49,999    8.740          39.52          22.04
## £50,000-74,999    5.175          23.40          13.05
## £100,000-149,000  1.840           8.32           4.64
## £150,000 or more   0.460           2.08           1.16
## Prefer not to say  3.220          14.56           8.12
##
##           Rarely or never
## Less than £12,000  3.150
## £12,000-14,999    2.100
## £15,000-19,999    4.725
## £20,000-24,999    3.450
## £25,000-34,999    3.900
## £35,000-49,999    5.700
## £50,000-74,999    3.375
## £100,000-149,000  1.200
## £150,000 or more   0.300
## Prefer not to say  2.100
```

```
chi.inc.barrier.sim$observed
```

```
##
##      Council collection Unclear information Difficult transport
##  Less than £12,000      9      7      6
##  £12,000-14,999      5     10      1
##  £15,000-19,999     17      9      6
##  £20,000-24,999     13      4      3
##  £25,000-34,999     12      3      4
##  £35,000-49,999     28     13      7
##  £50,000-74,999     15      7      3
##  £100,000-149,000      6      3      0
##  £150,000 or more      1      0      0
##  Prefer not to say      9      6      1
##
##      No local facilities No support Ends up in landfills
##  Less than £12,000      3      0      3
##  £12,000-14,999      3      0      2
##  £15,000-19,999      4      5      4
##  £20,000-24,999      6      0      2
##  £25,000-34,999      8      5      6
##  £35,000-49,999      7      0      6
##  £50,000-74,999      1      3      6
##  £100,000-149,000      1      1      3
##  £150,000 or more      0      2      0
##  Prefer not to say      2      2      1
##
##      Forgetting Recycling a hassle Household disagrees
##  Less than £12,000      2      2      1
##  £12,000-14,999      2      1      0
##  £15,000-19,999      3      2      2
##  £20,000-24,999      4      1      1
##  £25,000-34,999      2      0      0
##  £35,000-49,999      6      2      0
##  £50,000-74,999      5      1      1
##  £100,000-149,000      0      0      0
##  £150,000 or more      0      0      0
##  Prefer not to say      1      1      0
##
##      Recycling not important Other Already doing everything
##  Less than £12,000      0      0      9
##  £12,000-14,999      0      2      2
##  £15,000-19,999      1      1      9
##  £20,000-24,999      2      1      9
##  £25,000-34,999      0      0     12
##  £35,000-49,999      0      0      7
##  £50,000-74,999      0      0      3
##  £100,000-149,000      0      0      2
##  £150,000 or more      1      0      0
##  Prefer not to say      1      0      4
```

```
chi.inc.barrier.sim$expected
```

```

##
##      Council collection Unclear information Difficult transport
##  Less than £12,000      12.0750      6.510      3.2550
##  £12,000-14,999      8.0500      4.340      2.1700
##  £15,000-19,999      18.1125      9.765      4.8825
##  £20,000-24,999      13.2250      7.130      3.5650
##  £25,000-34,999      14.9500      8.060      4.0300
##  £35,000-49,999      21.8500      11.780      5.8900
##  £50,000-74,999      12.9375      6.975      3.4875
##  £100,000-149,000      4.6000      2.480      1.2400
##  £150,000 or more      1.1500      0.620      0.3100
##  Prefer not to say      8.0500      4.340      2.1700
##
##      No local facilities No support Ends up in landfills
##  Less than £12,000      3.6750      1.890      3.4650
##  £12,000-14,999      2.4500      1.260      2.3100
##  £15,000-19,999      5.5125      2.835      5.1975
##  £20,000-24,999      4.0250      2.070      3.7950
##  £25,000-34,999      4.5500      2.340      4.2900
##  £35,000-49,999      6.6500      3.420      6.2700
##  £50,000-74,999      3.9375      2.025      3.7125
##  £100,000-149,000      1.4000      0.720      1.3200
##  £150,000 or more      0.3500      0.180      0.3300
##  Prefer not to say      2.4500      1.260      2.3100
##
##      Forgetting Recycling a hassle Household disagrees
##  Less than £12,000      2.6250      1.050      0.5250
##  £12,000-14,999      1.7500      0.700      0.3500
##  £15,000-19,999      3.9375      1.575      0.7875
##  £20,000-24,999      2.8750      1.150      0.5750
##  £25,000-34,999      3.2500      1.300      0.6500
##  £35,000-49,999      4.7500      1.900      0.9500
##  £50,000-74,999      2.8125      1.125      0.5625
##  £100,000-149,000      1.0000      0.400      0.2000
##  £150,000 or more      0.2500      0.100      0.0500
##  Prefer not to say      1.7500      0.700      0.3500
##
##      Recycling not important Other Already doing everything
##  Less than £12,000      0.5250  0.42      5.9850
##  £12,000-14,999      0.3500  0.28      3.9900
##  £15,000-19,999      0.7875  0.63      8.9775
##  £20,000-24,999      0.5750  0.46      6.5550
##  £25,000-34,999      0.6500  0.52      7.4100
##  £35,000-49,999      0.9500  0.76     10.8300
##  £50,000-74,999      0.5625  0.45      6.4125
##  £100,000-149,000      0.2000  0.16      2.2800
##  £150,000 or more      0.0500  0.04      0.5700
##  Prefer not to say      0.3500  0.28      3.9900

```

```
chi.inc.barrier2.sim$observed
```

```

##
##      Limited alternatives No SUP-free alternatives
##  Less than £12,000      7      8

```

##	£12,000-14,999	6	4
##	£15,000-19,999	10	16
##	£20,000-24,999	8	6
##	£25,000-34,999	13	8
##	£35,000-49,999	21	19
##	£50,000-74,999	11	11
##	£100,000-149,000	2	4
##	£150,000 or more	0	2
##	Prefer not to say	12	7
##			
##	Alternatives expensive Limited functioning		
##	Less than £12,000	9	4
##	£12,000-14,999	9	5
##	£15,000-19,999	14	6
##	£20,000-24,999	11	6
##	£25,000-34,999	7	3
##	£35,000-49,999	17	7
##	£50,000-74,999	6	5
##	£100,000-149,000	6	2
##	£150,000 or more	1	0
##	Prefer not to say	5	1
##			
##	Forgetting reusables Reducing not important Other		
##	Less than £12,000	9	0 0
##	£12,000-14,999	2	1 1
##	£15,000-19,999	4	3 3
##	£20,000-24,999	4	3 0
##	£25,000-34,999	9	1 1
##	£35,000-49,999	6	2 1
##	£50,000-74,999	5	2 1
##	£100,000-149,000	1	0 0
##	£150,000 or more	0	1 0
##	Prefer not to say	0	0 1
##			
##	No barriers		
##	Less than £12,000	5	
##	£12,000-14,999	0	
##	£15,000-19,999	7	
##	£20,000-24,999	8	
##	£25,000-34,999	10	
##	£35,000-49,999	3	
##	£50,000-74,999	4	
##	£100,000-149,000	1	
##	£150,000 or more	0	
##	Prefer not to say	2	

```
chi.inc.barrier2.sim$expected
```

##		
##	Limited alternatives No SUP-free alternatives	
##	Less than £12,000	9.450 8.9250
##	£12,000-14,999	6.300 5.9500
##	£15,000-19,999	14.175 13.3875
##	£20,000-24,999	10.350 9.7750

##	£25,000-34,999	11.700	11.0500
##	£35,000-49,999	17.100	16.1500
##	£50,000-74,999	10.125	9.5625
##	£100,000-149,000	3.600	3.4000
##	£150,000 or more	0.900	0.8500
##	Prefer not to say	6.300	5.9500
##			
##	Alternatives expensive Limited functioning		
##	Less than £12,000	8.9250	4.0950
##	£12,000-14,999	5.9500	2.7300
##	£15,000-19,999	13.3875	6.1425
##	£20,000-24,999	9.7750	4.4850
##	£25,000-34,999	11.0500	5.0700
##	£35,000-49,999	16.1500	7.4100
##	£50,000-74,999	9.5625	4.3875
##	£100,000-149,000	3.4000	1.5600
##	£150,000 or more	0.8500	0.3900
##	Prefer not to say	5.9500	2.7300
##			
##	Forgetting reusables Reducing not important Other		
##	Less than £12,000	4.2	1.3650 0.84
##	£12,000-14,999	2.8	0.9100 0.56
##	£15,000-19,999	6.3	2.0475 1.26
##	£20,000-24,999	4.6	1.4950 0.92
##	£25,000-34,999	5.2	1.6900 1.04
##	£35,000-49,999	7.6	2.4700 1.52
##	£50,000-74,999	4.5	1.4625 0.90
##	£100,000-149,000	1.6	0.5200 0.32
##	£150,000 or more	0.4	0.1300 0.08
##	Prefer not to say	2.8	0.9100 0.56
##			
##	No barriers		
##	Less than £12,000	4.2	
##	£12,000-14,999	2.8	
##	£15,000-19,999	6.3	
##	£20,000-24,999	4.6	
##	£25,000-34,999	5.2	
##	£35,000-49,999	7.6	
##	£50,000-74,999	4.5	
##	£100,000-149,000	1.6	
##	£150,000 or more	0.4	
##	Prefer not to say	2.8	

```
chi.inc.mainconsid.sim$observed
```

##				
##	Value for money Price Quality Deals/discounts			
##	Less than £12,000	12	12	11 4
##	£12,000-14,999	9	6	3 2
##	£15,000-19,999	18	11	16 5
##	£20,000-24,999	10	17	10 3
##	£25,000-34,999	18	15	9 1
##	£35,000-49,999	23	19	18 2
##	£50,000-74,999	16	4	10 8

##	£100,000-149,000	5	3	7	0	
##	£150,000 or more	0	1	1	1	
##	Prefer not to say	8	9	3	0	
##						
##		Use-by-dates/longevity Convenience				
##	Less than £12,000		1		1	
##	£12,000-14,999		1		2	
##	£15,000-19,999		1		2	
##	£20,000-24,999		2		0	
##	£25,000-34,999		1		0	
##	£35,000-49,999		2		2	
##	£50,000-74,999		2		1	
##	£100,000-149,000		1		0	
##	£150,000 or more		0		0	
##	Prefer not to say		3		2	
##						
##		Ease of recycling packaging Sustainability Brand Ethics				
##	Less than £12,000		1	0	0	0
##	£12,000-14,999		2	1	1	1
##	£15,000-19,999		1	4	2	1
##	£20,000-24,999		2	2	0	0
##	£25,000-34,999		6	2	0	0
##	£35,000-49,999		6	2	1	1
##	£50,000-74,999		3	1	0	0
##	£100,000-149,000		0	0	0	0
##	£150,000 or more		0	0	0	1
##	Prefer not to say		1	1	0	1
##						
##		Other				
##	Less than £12,000	0				
##	£12,000-14,999	0				
##	£15,000-19,999	2				
##	£20,000-24,999	0				
##	£25,000-34,999	0				
##	£35,000-49,999	0				
##	£50,000-74,999	0				
##	£100,000-149,000	0				
##	£150,000 or more	0				
##	Prefer not to say	0				

```
chi.inc.mainconsid.sim$expected
```

##					
##		Value for money	Price	Quality	Deals/discounts
##	Less than £12,000	12.4950	10.1850	9.24	2.730
##	£12,000-14,999	8.3300	6.7900	6.16	1.820
##	£15,000-19,999	18.7425	15.2775	13.86	4.095
##	£20,000-24,999	13.6850	11.1550	10.12	2.990
##	£25,000-34,999	15.4700	12.6100	11.44	3.380
##	£35,000-49,999	22.6100	18.4300	16.72	4.940
##	£50,000-74,999	13.3875	10.9125	9.90	2.925
##	£100,000-149,000	4.7600	3.8800	3.52	1.040
##	£150,000 or more	1.1900	0.9700	0.88	0.260
##	Prefer not to say	8.3300	6.7900	6.16	1.820

```

##
##          Use-by-dates/longevity Convenience
## Less than £12,000          1.470          1.050
## £12,000-14,999            0.980          0.700
## £15,000-19,999            2.205          1.575
## £20,000-24,999            1.610          1.150
## £25,000-34,999            1.820          1.300
## £35,000-49,999            2.660          1.900
## £50,000-74,999            1.575          1.125
## £100,000-149,000          0.560          0.400
## £150,000 or more           0.140          0.100
## Prefer not to say          0.980          0.700
##
##          Ease of recycling packaging Sustainability Brand Ethics
## Less than £12,000          2.310          1.3650 0.42 0.5250
## £12,000-14,999            1.540          0.9100 0.28 0.3500
## £15,000-19,999            3.465          2.0475 0.63 0.7875
## £20,000-24,999            2.530          1.4950 0.46 0.5750
## £25,000-34,999            2.860          1.6900 0.52 0.6500
## £35,000-49,999            4.180          2.4700 0.76 0.9500
## £50,000-74,999            2.475          1.4625 0.45 0.5625
## £100,000-149,000          0.880          0.5200 0.16 0.2000
## £150,000 or more           0.220          0.1300 0.04 0.0500
## Prefer not to say          1.540          0.9100 0.28 0.3500
##
##          Other
## Less than £12,000          0.210
## £12,000-14,999            0.140
## £15,000-19,999            0.315
## £20,000-24,999            0.230
## £25,000-34,999            0.260
## £35,000-49,999            0.380
## £50,000-74,999            0.225
## £100,000-149,000          0.080
## £150,000 or more           0.020
## Prefer not to say          0.140

```

```
chi.inc.litter.sim$observed
```

```

##
##          Strongly agree Agree Neither agree nor disagree Disagree
## Less than £12,000          18   14                                4     2
## £12,000-14,999            11   14                                2     1
## £15,000-19,999            26   27                                8     2
## £20,000-24,999            17   18                               11     0
## £25,000-34,999            26   16                                9     1
## £35,000-49,999            33   35                                7     1
## £50,000-74,999            20   19                                5     1
## £100,000-149,000           6     9                                1     0
## £150,000 or more           3     1                                0     0
## Prefer not to say          13     9                               6     0
##
##          Strongly disagree
## Less than £12,000          4

```

##	£12,000-14,999	0
##	£15,000-19,999	0
##	£20,000-24,999	0
##	£25,000-34,999	0
##	£35,000-49,999	0
##	£50,000-74,999	0
##	£100,000-149,000	0
##	£150,000 or more	0
##	Prefer not to say	0

```
chi.inc.litter.sim$expected
```

##					
##		Strongly agree	Agree	Neither agree nor disagree	Disagree
##	Less than £12,000	18.1650	17.010	5.5650	0.84
##	£12,000-14,999	12.1100	11.340	3.7100	0.56
##	£15,000-19,999	27.2475	25.515	8.3475	1.26
##	£20,000-24,999	19.8950	18.630	6.0950	0.92
##	£25,000-34,999	22.4900	21.060	6.8900	1.04
##	£35,000-49,999	32.8700	30.780	10.0700	1.52
##	£50,000-74,999	19.4625	18.225	5.9625	0.90
##	£100,000-149,000	6.9200	6.480	2.1200	0.32
##	£150,000 or more	1.7300	1.620	0.5300	0.08
##	Prefer not to say	12.1100	11.340	3.7100	0.56
##					
##		Strongly disagree			
##	Less than £12,000	0.42			
##	£12,000-14,999	0.28			
##	£15,000-19,999	0.63			
##	£20,000-24,999	0.46			
##	£25,000-34,999	0.52			
##	£35,000-49,999	0.76			
##	£50,000-74,999	0.45			
##	£100,000-149,000	0.16			
##	£150,000 or more	0.04			
##	Prefer not to say	0.28			

```
chi.inc.attitude.sim$observed
```

##										
##		1 (Not concerned)	2	3	4	5	6	7 (Very concerned)		
##	Less than £12,000	4	1	8	8	8	2		11	
##	£12,000-14,999	2	2	2	6	5	3		8	
##	£15,000-19,999	6	1	7	13	15	9		12	
##	£20,000-24,999	4	3	4	7	18	4		6	
##	£25,000-34,999	2	2	8	10	10	11		9	
##	£35,000-49,999	3	3	4	19	22	14		11	
##	£50,000-74,999	2	5	4	6	13	10		5	
##	£100,000-149,000	1	0	0	1	11	0		3	
##	£150,000 or more	0	0	0	0	2	2		0	
##	Prefer not to say	3	3	4	3	10	1		4	

```
chi.inc.attitude.sim$expected
```

```
##
##           1 (Not concerned)      2      3      4      5      6
## Less than £12,000      2.8350 2.10 4.3050 7.6650 11.970 5.88
## £12,000-14,999      1.8900 1.40 2.8700 5.1100 7.980 3.92
## £15,000-19,999      4.2525 3.15 6.4575 11.4975 17.955 8.82
## £20,000-24,999      3.1050 2.30 4.7150 8.3950 13.110 6.44
## £25,000-34,999      3.5100 2.60 5.3300 9.4900 14.820 7.28
## £35,000-49,999      5.1300 3.80 7.7900 13.8700 21.660 10.64
## £50,000-74,999      3.0375 2.25 4.6125 8.2125 12.825 6.30
## £100,000-149,000      1.0800 0.80 1.6400 2.9200 4.560 2.24
## £150,000 or more      0.2700 0.20 0.4100 0.7300 1.140 0.56
## Prefer not to say      1.8900 1.40 2.8700 5.1100 7.980 3.92
##
##           7 (Very concerned
## Less than £12,000      7.2450
## £12,000-14,999      4.8300
## £15,000-19,999      10.8675
## £20,000-24,999      7.9350
## £25,000-34,999      8.9700
## £35,000-49,999      13.1100
## £50,000-74,999      7.7625
## £100,000-149,000      2.7600
## £150,000 or more      0.6900
## Prefer not to say      4.8300
```

```
chi.inc.ocean.sim$observed
```

```
##
##           Always Most of the time Sometimes Rarely Never
## Less than £12,000      4      10      19      5      4
## £12,000-14,999      3      4      13      5      3
## £15,000-19,999      4      19      30      7      3
## £20,000-24,999      2      10      28      6      0
## £25,000-34,999      1      16      25      9      1
## £35,000-49,999      3      24      35      12      2
## £50,000-74,999      1      10      23      9      2
## £100,000-149,000      0      5      9      1      1
## £150,000 or more      1      0      3      0      0
## Prefer not to say      0      6      15      6      1
```

```
chi.inc.ocean.sim$expected
```

```
##
##           Always Most of the time Sometimes Rarely Never
## Less than £12,000 1.9950      10.92      21.0      6.30 1.7850
## £12,000-14,999 1.3300      7.28      14.0      4.20 1.1900
## £15,000-19,999 2.9925      16.38      31.5      9.45 2.6775
## £20,000-24,999 2.1850      11.96      23.0      6.90 1.9550
## £25,000-34,999 2.4700      13.52      26.0      7.80 2.2100
## £35,000-49,999 3.6100      19.76      38.0     11.40 3.2300
```

##	£50,000-74,999	2.1375	11.70	22.5	6.75	1.9125
##	£100,000-149,000	0.7600	4.16	8.0	2.40	0.6800
##	£150,000 or more	0.1900	1.04	2.0	0.60	0.1700
##	Prefer not to say	1.3300	7.28	14.0	4.20	1.1900

chi.inc.actions.sim\$observed

##		Yes, definitely	Yes, probably	No, probably not
##	Less than £12,000	17	16	6
##	£12,000-14,999	10	13	5
##	£15,000-19,999	19	37	5
##	£20,000-24,999	17	19	8
##	£25,000-34,999	16	27	2
##	£35,000-49,999	34	35	4
##	£50,000-74,999	16	18	8
##	£100,000-149,000	3	11	1
##	£150,000 or more	1	3	0
##	Prefer not to say	9	12	4

##		No, definitely not	I don't know
##	Less than £12,000	2	1
##	£12,000-14,999	0	0
##	£15,000-19,999	2	0
##	£20,000-24,999	1	1
##	£25,000-34,999	3	4
##	£35,000-49,999	2	1
##	£50,000-74,999	1	2
##	£100,000-149,000	0	1
##	£150,000 or more	0	0
##	Prefer not to say	0	3

chi.inc.actions.sim\$expected

##		Yes, definitely	Yes, probably	No, probably not
##	Less than £12,000	14.910	20.0550	4.5150
##	£12,000-14,999	9.940	13.3700	3.0100
##	£15,000-19,999	22.365	30.0825	6.7725
##	£20,000-24,999	16.330	21.9650	4.9450
##	£25,000-34,999	18.460	24.8300	5.5900
##	£35,000-49,999	26.980	36.2900	8.1700
##	£50,000-74,999	15.975	21.4875	4.8375
##	£100,000-149,000	5.680	7.6400	1.7200
##	£150,000 or more	1.420	1.9100	0.4300
##	Prefer not to say	9.940	13.3700	3.0100

##		No, definitely not	I don't know
##	Less than £12,000	1.1550	1.3650
##	£12,000-14,999	0.7700	0.9100
##	£15,000-19,999	1.7325	2.0475
##	£20,000-24,999	1.2650	1.4950
##	£25,000-34,999	1.4300	1.6900

##	£35,000-49,999	2.0900	2.4700
##	£50,000-74,999	1.2375	1.4625
##	£100,000-149,000	0.4400	0.5200
##	£150,000 or more	0.1100	0.1300
##	Prefer not to say	0.7700	0.9100

```
chi.inc.bottpurchase.sim$observed
```

##		None	1-2	3-5	6-10	11-15	16+	I don't know
##	Less than £12,000	2	15	13	10	1	0	1
##	£12,000-14,999	1	15	6	3	1	1	1
##	£15,000-19,999	1	27	15	9	4	5	2
##	£20,000-24,999	2	14	15	12	1	1	1
##	£25,000-34,999	1	13	21	12	3	0	2
##	£35,000-49,999	5	21	31	11	5	3	0
##	£50,000-74,999	0	13	14	13	3	1	1
##	£100,000-149,000	0	6	8	2	0	0	0
##	£150,000 or more	0	1	1	0	0	2	0
##	Prefer not to say	0	12	10	2	1	1	2

```
chi.inc.bottpurchase.sim$expected
```

##		None	1-2	3-5	6-10	11-15	16+	I don't know
##	Less than £12,000	1.26	14.3850	14.070	7.770	1.9950	1.470	1.050
##	£12,000-14,999	0.84	9.5900	9.380	5.180	1.3300	0.980	0.700
##	£15,000-19,999	1.89	21.5775	21.105	11.655	2.9925	2.205	1.575
##	£20,000-24,999	1.38	15.7550	15.410	8.510	2.1850	1.610	1.150
##	£25,000-34,999	1.56	17.8100	17.420	9.620	2.4700	1.820	1.300
##	£35,000-49,999	2.28	26.0300	25.460	14.060	3.6100	2.660	1.900
##	£50,000-74,999	1.35	15.4125	15.075	8.325	2.1375	1.575	1.125
##	£100,000-149,000	0.48	5.4800	5.360	2.960	0.7600	0.560	0.400
##	£150,000 or more	0.12	1.3700	1.340	0.740	0.1900	0.140	0.100
##	Prefer not to say	0.84	9.5900	9.380	5.180	1.3300	0.980	0.700

```
chi.inc.bottreuse.sim$observed
```

##		Never	Once	2-4 times	5-10 times	More often
##	Less than £12,000	8	4	13	5	12
##	£12,000-14,999	4	6	8	4	6
##	£15,000-19,999	6	10	19	7	21
##	£20,000-24,999	11	4	11	10	10
##	£25,000-34,999	11	8	16	10	7
##	£35,000-49,999	14	13	27	12	10
##	£50,000-74,999	7	12	16	7	3
##	£100,000-149,000	2	2	7	1	4
##	£150,000 or more	2	0	2	0	0
##	Prefer not to say	6	7	10	1	4

```
chi.inc.bottreuse.sim$expected
```

```
##
##           Never      Once 2-4 times 5-10 times More often
## Less than £12,000  7.4550  6.930   13.5450   5.9850   8.0850
## £12,000-14,999    4.9700  4.620   9.0300   3.9900   5.3900
## £15,000-19,999    11.1825 10.395  20.3175   8.9775  12.1275
## £20,000-24,999     8.1650  7.590  14.8350   6.5550   8.8550
## £25,000-34,999     9.2300  8.580  16.7700   7.4100  10.0100
## £35,000-49,999    13.4900 12.540  24.5100  10.8300  14.6300
## £50,000-74,999     7.9875  7.425  14.5125   6.4125   8.6625
## £100,000-149,000   2.8400  2.640   5.1600   2.2800   3.0800
## £150,000 or more   0.7100  0.660   1.2900   0.5700   0.7700
## Prefer not to say  4.9700  4.620   9.0300   3.9900   5.3900
```

```
chi.inc.bottdisp.sim$observed
```

```
##
##           General waste bin Recycling bin Recycling centre
## Less than £12,000           7           32           1
## £12,000-14,999            3           23           1
## £15,000-19,999            3           43           2
## £20,000-24,999            4           36           1
## £25,000-34,999            3           46           0
## £35,000-49,999            3           67           4
## £50,000-74,999            2           40           0
## £100,000-149,000           1           12           0
## £150,000 or more           0            3           1
## Prefer not to say           1           26           0
##
##           Specialist waste collection Landfill Deposit return scheme
## Less than £12,000           0            0           0
## £12,000-14,999            0            0           0
## £15,000-19,999            2            3           2
## £20,000-24,999            2            0           1
## £25,000-34,999            0            1           0
## £35,000-49,999            1            0           0
## £50,000-74,999            0            1           1
## £100,000-149,000           2            0           0
## £150,000 or more           0            0           0
## Prefer not to say           0            0           0
##
##           Indefinite storage Other I don't know
## Less than £12,000           0            1           1
## £12,000-14,999            1            0           0
## £15,000-19,999            8            0           0
## £20,000-24,999            2            0           0
## £25,000-34,999            1            1           0
## £35,000-49,999            1            0           0
## £50,000-74,999            1            0           0
## £100,000-149,000           1            0           0
## £150,000 or more           0            0           0
## Prefer not to say           1            0           0
```

chi.inc.bottdisp.sim\$expected

##				
##		General waste bin	Recycling bin	Recycling centre
##	Less than £12,000	2.8350	34.44	1.050
##	£12,000-14,999	1.8900	22.96	0.700
##	£15,000-19,999	4.2525	51.66	1.575
##	£20,000-24,999	3.1050	37.72	1.150
##	£25,000-34,999	3.5100	42.64	1.300
##	£35,000-49,999	5.1300	62.32	1.900
##	£50,000-74,999	3.0375	36.90	1.125
##	£100,000-149,000	1.0800	13.12	0.400
##	£150,000 or more	0.2700	3.28	0.100
##	Prefer not to say	1.8900	22.96	0.700
##				
##		Specialist waste collection	Landfill	Deposit return scheme
##	Less than £12,000		0.7350	0.5250
##	£12,000-14,999		0.4900	0.3500
##	£15,000-19,999		1.1025	0.7875
##	£20,000-24,999		0.8050	0.5750
##	£25,000-34,999		0.9100	0.6500
##	£35,000-49,999		1.3300	0.9500
##	£50,000-74,999		0.7875	0.5625
##	£100,000-149,000		0.2800	0.2000
##	£150,000 or more		0.0700	0.0500
##	Prefer not to say		0.4900	0.3500
##				
##		Indefinite storage	Other	I don't know
##	Less than £12,000	1.68	0.210	0.1050
##	£12,000-14,999	1.12	0.140	0.0700
##	£15,000-19,999	2.52	0.315	0.1575
##	£20,000-24,999	1.84	0.230	0.1150
##	£25,000-34,999	2.08	0.260	0.1300
##	£35,000-49,999	3.04	0.380	0.1900
##	£50,000-74,999	1.80	0.225	0.1125
##	£100,000-149,000	0.64	0.080	0.0400
##	£150,000 or more	0.16	0.020	0.0100
##	Prefer not to say	1.12	0.140	0.0700

chi.inc.tubspurchase.sim\$observed

##								
##		None	1-2	3-5	6-10	11-15	16+	I don't know
##	Less than £12,000	3	11	18	7	2	0	1
##	£12,000-14,999	1	11	10	4	2	0	0
##	£15,000-19,999	3	17	16	17	2	6	2
##	£20,000-24,999	0	15	15	8	4	2	2
##	£25,000-34,999	0	16	18	11	5	0	2
##	£35,000-49,999	3	14	30	22	4	2	1
##	£50,000-74,999	2	9	13	11	8	1	1
##	£100,000-149,000	0	4	8	1	2	1	0
##	£150,000 or more	0	1	2	0	0	1	0
##	Prefer not to say	0	10	13	4	0	0	1

```
chi.inc.tubspurchase.sim$expected
```

```
##
##           None    1-2    3-5    6-10  11-15    16+ I don't know
## Less than £12,000 1.26 11.34 15.0150 8.9250 3.0450 1.3650      1.050
## £12,000-14,999   0.84  7.56 10.0100 5.9500 2.0300 0.9100      0.700
## £15,000-19,999   1.89 17.01 22.5225 13.3875 4.5675 2.0475      1.575
## £20,000-24,999   1.38 12.42 16.4450 9.7750 3.3350 1.4950      1.150
## £25,000-34,999   1.56 14.04 18.5900 11.0500 3.7700 1.6900      1.300
## £35,000-49,999   2.28 20.52 27.1700 16.1500 5.5100 2.4700      1.900
## £50,000-74,999   1.35 12.15 16.0875 9.5625 3.2625 1.4625      1.125
## £100,000-149,000 0.48  4.32  5.7200  3.4000 1.1600 0.5200      0.400
## £150,000 or more 0.12  1.08  1.4300  0.8500 0.2900 0.1300      0.100
## Prefer not to say 0.84  7.56 10.0100  5.9500 2.0300 0.9100      0.700
```

```
chi.inc.tubreuse.sim$observed
```

```
##
##           Never Once 2-4 times 5-10 times More often
## Less than £12,000      5      3      12      6      16
## £12,000-14,999        3      4       7      3      11
## £15,000-19,999       10      2      11     10      30
## £20,000-24,999        7      6      11      5      17
## £25,000-34,999       10      3       9     13      17
## £35,000-49,999        8     12     23      5     28
## £50,000-74,999       10      5     12      9      9
## £100,000-149,000       1      2      6      3      4
## £150,000 or more       2      1      0      1      0
## Prefer not to say      5      3      6      3     11
```

```
chi.inc.tubreuse.sim$expected
```

```
##
##           Never    Once 2-4 times 5-10 times More often
## Less than £12,000 6.4050 4.3050 10.1850  6.090 15.0150
## £12,000-14,999   4.2700 2.8700  6.7900  4.060 10.0100
## £15,000-19,999   9.6075 6.4575 15.2775  9.135 22.5225
## £20,000-24,999   7.0150 4.7150 11.1550  6.670 16.4450
## £25,000-34,999   7.9300 5.3300 12.6100  7.540 18.5900
## £35,000-49,999  11.5900 7.7900 18.4300 11.020 27.1700
## £50,000-74,999   6.8625 4.6125 10.9125  6.525 16.0875
## £100,000-149,000 2.4400 1.6400  3.8800  2.320  5.7200
## £150,000 or more 0.6100 0.4100  0.9700  0.580  1.4300
## Prefer not to say 4.2700 2.8700  6.7900  4.060 10.0100
```

```
chi.inc.tubdisp.sim$observed
```

```
##
##           General waste bin Recycling bin Recycling centre
## Less than £12,000              7          24          2
## £12,000-14,999              6          14          0
```

##	£15,000-19,999	8	33	3
##	£20,000-24,999	11	25	3
##	£25,000-34,999	10	28	7
##	£35,000-49,999	17	41	4
##	£50,000-74,999	16	22	5
##	£100,000-149,000	3	8	3
##	£150,000 or more	1	1	0
##	Prefer not to say	7	15	2
##				
##		Specialist waste collection	Landfill	Deposit return scheme
##	Less than £12,000	2	0	0
##	£12,000-14,999	2	0	0
##	£15,000-19,999	3	1	2
##	£20,000-24,999	0	1	0
##	£25,000-34,999	0	0	0
##	£35,000-49,999	3	1	2
##	£50,000-74,999	0	0	0
##	£100,000-149,000	1	0	0
##	£150,000 or more	1	0	0
##	Prefer not to say	0	0	0
##				
##		Indefinite storage	Other	I don't know
##	Less than £12,000	4	3	0
##	£12,000-14,999	5	0	1
##	£15,000-19,999	12	1	0
##	£20,000-24,999	5	0	1
##	£25,000-34,999	5	0	2
##	£35,000-49,999	6	1	1
##	£50,000-74,999	1	1	0
##	£100,000-149,000	1	0	0
##	£150,000 or more	1	0	0
##	Prefer not to say	2	1	1

```
chi.inc.tubdisp.sim$expected
```

##				
##		General waste bin	Recycling bin	Recycling centre
##	Less than £12,000	9.030	22.1550	3.0450
##	£12,000-14,999	6.020	14.7700	2.0300
##	£15,000-19,999	13.545	33.2325	4.5675
##	£20,000-24,999	9.890	24.2650	3.3350
##	£25,000-34,999	11.180	27.4300	3.7700
##	£35,000-49,999	16.340	40.0900	5.5100
##	£50,000-74,999	9.675	23.7375	3.2625
##	£100,000-149,000	3.440	8.4400	1.1600
##	£150,000 or more	0.860	2.1100	0.2900
##	Prefer not to say	6.020	14.7700	2.0300
##				
##		Specialist waste collection	Landfill	Deposit return scheme
##	Less than £12,000	1.26	0.3150	0.42
##	£12,000-14,999	0.84	0.2100	0.28
##	£15,000-19,999	1.89	0.4725	0.63
##	£20,000-24,999	1.38	0.3450	0.46
##	£25,000-34,999	1.56	0.3900	0.52

##	£35,000-49,999	2.28	0.5700	0.76
##	£50,000-74,999	1.35	0.3375	0.45
##	£100,000-149,000	0.48	0.1200	0.16
##	£150,000 or more	0.12	0.0300	0.04
##	Prefer not to say	0.84	0.2100	0.28
##				
##		Indefinite storage	Other	I don't know
##	Less than £12,000	4.410	0.7350	0.630
##	£12,000-14,999	2.940	0.4900	0.420
##	£15,000-19,999	6.615	1.1025	0.945
##	£20,000-24,999	4.830	0.8050	0.690
##	£25,000-34,999	5.460	0.9100	0.780
##	£35,000-49,999	7.980	1.3300	1.140
##	£50,000-74,999	4.725	0.7875	0.675
##	£100,000-149,000	1.680	0.2800	0.240
##	£150,000 or more	0.420	0.0700	0.060
##	Prefer not to say	2.940	0.4900	0.420

chi.inc.filmpurchase.sim\$observed

##								
##		None	1-2	3-5	6-10	11-15	16+	I don't know
##	Less than £12,000	2	10	14	9	6	0	1
##	£12,000-14,999	3	7	10	5	3	0	0
##	£15,000-19,999	4	13	15	16	4	7	4
##	£20,000-24,999	0	10	14	13	5	3	1
##	£25,000-34,999	0	13	16	16	4	1	2
##	£35,000-49,999	1	12	30	24	5	3	1
##	£50,000-74,999	1	9	10	14	9	1	1
##	£100,000-149,000	0	3	4	7	1	1	0
##	£150,000 or more	0	1	1	1	0	1	0
##	Prefer not to say	1	6	8	8	2	1	2

chi.inc.filmpurchase.sim\$expected

##								
##		None	1-2	3-5	6-10	11-15	16+	I don't know
##	Less than £12,000	1.26	8.82	12.810	11.8650	4.0950	1.890	1.26
##	£12,000-14,999	0.84	5.88	8.540	7.9100	2.7300	1.260	0.84
##	£15,000-19,999	1.89	13.23	19.215	17.7975	6.1425	2.835	1.89
##	£20,000-24,999	1.38	9.66	14.030	12.9950	4.4850	2.070	1.38
##	£25,000-34,999	1.56	10.92	15.860	14.6900	5.0700	2.340	1.56
##	£35,000-49,999	2.28	15.96	23.180	21.4700	7.4100	3.420	2.28
##	£50,000-74,999	1.35	9.45	13.725	12.7125	4.3875	2.025	1.35
##	£100,000-149,000	0.48	3.36	4.880	4.5200	1.5600	0.720	0.48
##	£150,000 or more	0.12	0.84	1.220	1.1300	0.3900	0.180	0.12
##	Prefer not to say	0.84	5.88	8.540	7.9100	2.7300	1.260	0.84

chi.inc.filmreuse.sim\$observed

##	
##	Never Once 2-4 times 5-10 times More often

##	Less than £12,000	23	7	8	1	3
##	£12,000-14,999	17	3	5	2	1
##	£15,000-19,999	34	12	10	2	5
##	£20,000-24,999	27	12	3	2	2
##	£25,000-34,999	40	3	6	2	1
##	£35,000-49,999	41	25	9	1	0
##	£50,000-74,999	27	10	4	2	2
##	£100,000-149,000	7	2	6	0	1
##	£150,000 or more	2	1	1	0	0
##	Prefer not to say	18	8	2	0	0

```
chi.inc.filmreuse.sim$expected
```

##		Never	Once	2-4 times	5-10 times	More often
##	Less than £12,000	24.78	8.7150	5.670	1.26	1.5750
##	£12,000-14,999	16.52	5.8100	3.780	0.84	1.0500
##	£15,000-19,999	37.17	13.0725	8.505	1.89	2.3625
##	£20,000-24,999	27.14	9.5450	6.210	1.38	1.7250
##	£25,000-34,999	30.68	10.7900	7.020	1.56	1.9500
##	£35,000-49,999	44.84	15.7700	10.260	2.28	2.8500
##	£50,000-74,999	26.55	9.3375	6.075	1.35	1.6875
##	£100,000-149,000	9.44	3.3200	2.160	0.48	0.6000
##	£150,000 or more	2.36	0.8300	0.540	0.12	0.1500
##	Prefer not to say	16.52	5.8100	3.780	0.84	1.0500

```
chi.inc.filmdisp.sim$observed
```

##		General waste bin	Recycling bin	Recycling centre
##	Less than £12,000	25	10	2
##	£12,000-14,999	17	9	1
##	£15,000-19,999	41	12	3
##	£20,000-24,999	30	12	2
##	£25,000-34,999	34	14	2
##	£35,000-49,999	51	17	3
##	£50,000-74,999	31	13	1
##	£100,000-149,000	12	1	2
##	£150,000 or more	2	0	0
##	Prefer not to say	22	4	1
##		Specialist waste collection	Landfill	Deposit return scheme
##	Less than £12,000	0	0	0
##	£12,000-14,999	1	0	0
##	£15,000-19,999	3	1	1
##	£20,000-24,999	0	0	0
##	£25,000-34,999	0	0	0
##	£35,000-49,999	1	0	1
##	£50,000-74,999	0	0	0
##	£100,000-149,000	0	1	0
##	£150,000 or more	1	1	0
##	Prefer not to say	0	0	0
##				

##		Indefinite storage	Other	I don't know
##	Less than £12,000	1	1	3
##	£12,000-14,999	0	0	0
##	£15,000-19,999	0	2	0
##	£20,000-24,999	1	1	0
##	£25,000-34,999	0	1	1
##	£35,000-49,999	1	0	2
##	£50,000-74,999	0	0	0
##	£100,000-149,000	0	0	0
##	£150,000 or more	0	0	0
##	Prefer not to say	0	1	0

chi.inc.filmdisp.sim\$expected

##		General waste bin	Recycling bin	Recycling centre
##	Less than £12,000	27.8250	9.66	1.7850
##	£12,000-14,999	18.5500	6.44	1.1900
##	£15,000-19,999	41.7375	14.49	2.6775
##	£20,000-24,999	30.4750	10.58	1.9550
##	£25,000-34,999	34.4500	11.96	2.2100
##	£35,000-49,999	50.3500	17.48	3.2300
##	£50,000-74,999	29.8125	10.35	1.9125
##	£100,000-149,000	10.6000	3.68	0.6800
##	£150,000 or more	2.6500	0.92	0.1700
##	Prefer not to say	18.5500	6.44	1.1900

##		Specialist waste collection	Landfill	Deposit return scheme
##	Less than £12,000	0.630	0.3150	0.210
##	£12,000-14,999	0.420	0.2100	0.140
##	£15,000-19,999	0.945	0.4725	0.315
##	£20,000-24,999	0.690	0.3450	0.230
##	£25,000-34,999	0.780	0.3900	0.260
##	£35,000-49,999	1.140	0.5700	0.380
##	£50,000-74,999	0.675	0.3375	0.225
##	£100,000-149,000	0.240	0.1200	0.080
##	£150,000 or more	0.060	0.0300	0.020
##	Prefer not to say	0.420	0.2100	0.140

##		Indefinite storage	Other	I don't know
##	Less than £12,000	0.3150	0.630	0.630
##	£12,000-14,999	0.2100	0.420	0.420
##	£15,000-19,999	0.4725	0.945	0.945
##	£20,000-24,999	0.3450	0.690	0.690
##	£25,000-34,999	0.3900	0.780	0.780
##	£35,000-49,999	0.5700	1.140	1.140
##	£50,000-74,999	0.3375	0.675	0.675
##	£100,000-149,000	0.1200	0.240	0.240
##	£150,000 or more	0.0300	0.060	0.060
##	Prefer not to say	0.2100	0.420	0.420

chi.inc.bagpurchase.sim\$observed

```
##
##          None 1-2 3-5 6-10 11-15 16+ I don't know
## Less than £12,000 24 12 3 0 2 0 1
## £12,000-14,999 11 9 5 2 1 0 0
## £15,000-19,999 33 11 2 6 5 4 2
## £20,000-24,999 23 10 7 2 1 2 1
## £25,000-34,999 33 13 5 1 0 0 0
## £35,000-49,999 51 9 8 3 2 1 2
## £50,000-74,999 23 9 7 3 2 1 0
## £100,000-149,000 10 1 4 0 1 0 0
## £150,000 or more 1 1 1 1 0 0 0
## Prefer not to say 23 2 1 1 0 0 1
```

```
chi.inc.bagpurchase.sim$expected
```

```
##
##          None      1-2      3-5      6-10 11-15 16+ I don't know
## Less than £12,000 24.36 8.0850 4.5150 1.9950 1.470 0.84 0.7350
## £12,000-14,999 16.24 5.3900 3.0100 1.3300 0.980 0.56 0.4900
## £15,000-19,999 36.54 12.1275 6.7725 2.9925 2.205 1.26 1.1025
## £20,000-24,999 26.68 8.8550 4.9450 2.1850 1.610 0.92 0.8050
## £25,000-34,999 30.16 10.0100 5.5900 2.4700 1.820 1.04 0.9100
## £35,000-49,999 44.08 14.6300 8.1700 3.6100 2.660 1.52 1.3300
## £50,000-74,999 26.10 8.6625 4.8375 2.1375 1.575 0.90 0.7875
## £100,000-149,000 9.28 3.0800 1.7200 0.7600 0.560 0.32 0.2800
## £150,000 or more 2.32 0.7700 0.4300 0.1900 0.140 0.08 0.0700
## Prefer not to say 16.24 5.3900 3.0100 1.3300 0.980 0.56 0.4900
```

```
chi.inc.bagreuse.sim$observed
```

```
##
##          Never Once 2-4 times 5-10 times More often
## Less than £12,000 4 4 6 5 23
## £12,000-14,999 1 3 7 6 11
## £15,000-19,999 4 9 14 13 23
## £20,000-24,999 3 2 13 7 21
## £25,000-34,999 5 5 12 7 23
## £35,000-49,999 6 11 17 14 28
## £50,000-74,999 2 7 9 14 13
## £100,000-149,000 1 2 6 1 6
## £150,000 or more 1 0 3 0 0
## Prefer not to say 4 1 6 3 14
```

```
chi.inc.bagreuse.sim$expected
```

```
##
##          Never Once 2-4 times 5-10 times More often
## Less than £12,000 3.2550 4.62 9.7650 7.350 17.010
## £12,000-14,999 2.1700 3.08 6.5100 4.900 11.340
## £15,000-19,999 4.8825 6.93 14.6475 11.025 25.515
## £20,000-24,999 3.5650 5.06 10.6950 8.050 18.630
## £25,000-34,999 4.0300 5.72 12.0900 9.100 21.060
```

##	£35,000-49,999	5.8900	8.36	17.6700	13.300	30.780
##	£50,000-74,999	3.4875	4.95	10.4625	7.875	18.225
##	£100,000-149,000	1.2400	1.76	3.7200	2.800	6.480
##	£150,000 or more	0.3100	0.44	0.9300	0.700	1.620
##	Prefer not to say	2.1700	3.08	6.5100	4.900	11.340

chi.inc.bagdisp.sim\$observed

##		General waste bin	Recycling bin	Recycling centre
##	Less than £12,000	13	11	1
##	£12,000-14,999	10	8	0
##	£15,000-19,999	17	12	5
##	£20,000-24,999	16	15	3
##	£25,000-34,999	20	6	5
##	£35,000-49,999	34	17	6
##	£50,000-74,999	18	10	4
##	£100,000-149,000	3	7	1
##	£150,000 or more	1	0	2
##	Prefer not to say	11	6	2

##		Specialist waste collection	Landfill	Deposit return scheme
##	Less than £12,000	0	0	2
##	£12,000-14,999	1	0	1
##	£15,000-19,999	2	1	5
##	£20,000-24,999	0	0	0
##	£25,000-34,999	1	0	1
##	£35,000-49,999	2	0	0
##	£50,000-74,999	2	0	2
##	£100,000-149,000	0	1	0
##	£150,000 or more	0	0	0
##	Prefer not to say	0	0	0

##		Indefinite storage	Other	I don't know
##	Less than £12,000	9	4	2
##	£12,000-14,999	8	0	0
##	£15,000-19,999	13	6	2
##	£20,000-24,999	10	1	1
##	£25,000-34,999	12	5	2
##	£35,000-49,999	12	4	1
##	£50,000-74,999	7	2	0
##	£100,000-149,000	3	1	0
##	£150,000 or more	1	0	0
##	Prefer not to say	8	0	1

chi.inc.bagdisp.sim\$expected

##		General waste bin	Recycling bin	Recycling centre
##	Less than £12,000	15.0150	9.66	3.0450
##	£12,000-14,999	10.0100	6.44	2.0300
##	£15,000-19,999	22.5225	14.49	4.5675
##	£20,000-24,999	16.4450	10.58	3.3350

##	£25,000-34,999	18.5900	11.96	3.7700
##	£35,000-49,999	27.1700	17.48	5.5100
##	£50,000-74,999	16.0875	10.35	3.2625
##	£100,000-149,000	5.7200	3.68	1.1600
##	£150,000 or more	1.4300	0.92	0.2900
##	Prefer not to say	10.0100	6.44	2.0300
##				
##		Specialist waste collection	Landfill	Deposit return scheme
##	Less than £12,000	0.84	0.210	1.1550
##	£12,000-14,999	0.56	0.140	0.7700
##	£15,000-19,999	1.26	0.315	1.7325
##	£20,000-24,999	0.92	0.230	1.2650
##	£25,000-34,999	1.04	0.260	1.4300
##	£35,000-49,999	1.52	0.380	2.0900
##	£50,000-74,999	0.90	0.225	1.2375
##	£100,000-149,000	0.32	0.080	0.4400
##	£150,000 or more	0.08	0.020	0.1100
##	Prefer not to say	0.56	0.140	0.7700
##				
##		Indefinite storage	Other	I don't know
##	Less than £12,000	8.7150	2.4150	0.9450
##	£12,000-14,999	5.8100	1.6100	0.6300
##	£15,000-19,999	13.0725	3.6225	1.4175
##	£20,000-24,999	9.5450	2.6450	1.0350
##	£25,000-34,999	10.7900	2.9900	1.1700
##	£35,000-49,999	15.7700	4.3700	1.7100
##	£50,000-74,999	9.3375	2.5875	1.0125
##	£100,000-149,000	3.3200	0.9200	0.3600
##	£150,000 or more	0.8300	0.2300	0.0900
##	Prefer not to say	5.8100	1.6100	0.6300

Vehicle ownership

```
chi.veh.barrier <- chisq.test(veh.barrier)
```

```
## Warning in chisq.test(veh.barrier): Chi-squared approximation may be incorrect
```

```
chi.veh.barrier.sim <- chisq.test(veh.barrier, simulate.p.value = TRUE)
chi.veh.barrier.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data: veh.barrier
## X-squared = 21.125, df = NA, p-value = 0.02849
```

```
chi.veh.barrier2 <- chisq.test(veh.barrier2)
```

```
## Warning in chisq.test(veh.barrier2): Chi-squared approximation may be incorrect
```

```
chi.veh.barrier2.sim <- chisq.test(veh.barrier2, simulate.p.value = TRUE)
chi.veh.barrier2.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data: veh.barrier2
## X-squared = 18.263, df = NA, p-value = 0.008496
```

```
chi.veh.mainconsid <- chisq.test(veh.mainconsid)
```

```
## Warning in chisq.test(veh.mainconsid): Chi-squared approximation may be
## incorrect
```

```
chi.veh.mainconsid.sim <- chisq.test(veh.mainconsid, simulate.p.value =
TRUE)
chi.veh.mainconsid.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data: veh.mainconsid
## X-squared = 11.927, df = NA, p-value = 0.3003
```

```
chi.veh.litter <- chisq.test(veh.litter)
```

```
## Warning in chisq.test(veh.litter): Chi-squared approximation may be incorrect
```

```
chi.veh.litter.sim <- chisq.test(veh.litter, simulate.p.value = TRUE)
chi.veh.litter.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data: veh.litter
## X-squared = 9.7207, df = NA, p-value = 0.03798
```

```
chi.veh.actions <- chisq.test(veh.actions)
```

```
## Warning in chisq.test(veh.actions): Chi-squared approximation may be incorrect
```

```
chi.veh.actions.sim <- chisq.test(veh.actions, simulate.p.value = TRUE)
chi.veh.actions.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data: veh.actions
## X-squared = 3.3732, df = NA, p-value = 0.5047
```

```
chi.veh.zerow <- chisq.test(veh.zerow)
```

```
## Warning in chisq.test(veh.zerow): Chi-squared approximation may be incorrect
```

```
chi.veh.zerow.sim <- chisq.test(veh.zerow, simulate.p.value = TRUE)
chi.veh.zerow.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data: veh.zerow
## X-squared = 4.1455, df = NA, p-value = 0.5347
```

```
chi.veh.bottpurchase <- chisq.test(veh.bottpurchase)
```

```
## Warning in chisq.test(veh.bottpurchase): Chi-squared approximation may be
## incorrect
```

```
chi.veh.bottpurchase.sim <- chisq.test(veh.bottpurchase, simulate.p.value =
TRUE)
chi.veh.bottpurchase.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data: veh.bottpurchase
## X-squared = 14.588, df = NA, p-value = 0.02599
```

```
chi.veh.bottdisp <- chisq.test(veh.bottdisp)
```

```
## Warning in chisq.test(veh.bottdisp): Chi-squared approximation may be incorrect
```

```
chi.veh.bottdisp.sim <- chisq.test(veh.bottdisp, simulate.p.value = TRUE)
chi.veh.bottdisp.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data: veh.bottdisp
## X-squared = 18.385, df = NA, p-value = 0.009995
```

```
chi.veh.tubspurchase <- chisq.test(veh.tubspurchase)
```

```
## Warning in chisq.test(veh.tubspurchase): Chi-squared approximation may be  
## incorrect
```

```
chi.veh.tubspurchase.sim <- chisq.test(veh.tubspurchase, simulate.p.value =  
TRUE)  
chi.veh.tubspurchase.sim
```

```
##  
## Pearson's Chi-squared test with simulated p-value (based on 2000  
## replicates)  
##  
## data: veh.tubspurchase  
## X-squared = 4.6975, df = NA, p-value = 0.5912
```

```
chi.veh.tubdisp <- chisq.test(veh.tubdisp)
```

```
## Warning in chisq.test(veh.tubdisp): Chi-squared approximation may be incorrect
```

```
chi.veh.tubdisp.sim <- chisq.test(veh.tubdisp, simulate.p.value = TRUE)  
chi.veh.tubdisp.sim
```

```
##  
## Pearson's Chi-squared test with simulated p-value (based on 2000  
## replicates)  
##  
## data: veh.tubdisp  
## X-squared = 11.304, df = NA, p-value = 0.1779
```

```
chi.veh.filmpurchase <- chisq.test(veh.filmpurchase)
```

```
## Warning in chisq.test(veh.filmpurchase): Chi-squared approximation may be  
## incorrect
```

```
chi.veh.filmpurchase.sim <- chisq.test(veh.filmpurchase, simulate.p.value =  
TRUE)  
chi.veh.filmpurchase.sim
```

```
##  
## Pearson's Chi-squared test with simulated p-value (based on 2000  
## replicates)  
##  
## data: veh.filmpurchase  
## X-squared = 8.2761, df = NA, p-value = 0.2214
```

```
chi.veh.filmreuse <- chisq.test(veh.filmreuse)
```

```
## Warning in chisq.test(veh.filmreuse): Chi-squared approximation may be incorrect
```

```
chi.veh.filmreuse.sim <- chisq.test(veh.filmreuse, simulate.p.value = TRUE)
chi.veh.filmreuse.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data:  veh.filmreuse
## X-squared = 0.6904, df = NA, p-value = 0.9575
```

```
chi.veh.filmdisp <- chisq.test(veh.filmdisp)
```

```
## Warning in chisq.test(veh.filmdisp): Chi-squared approximation may be incorrect
```

```
chi.veh.filmdisp.sim <- chisq.test(veh.filmdisp, simulate.p.value = TRUE)
chi.veh.filmdisp.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data:  veh.filmdisp
## X-squared = 5.3941, df = NA, p-value = 0.7371
```

```
chi.veh.bagpurchase <- chisq.test(veh.bagpurchase)
```

```
## Warning in chisq.test(veh.bagpurchase): Chi-squared approximation may be
## incorrect
```

```
chi.veh.bagpurchase.sim <- chisq.test(veh.bagpurchase, simulate.p.value =
TRUE)
chi.veh.bagpurchase.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data:  veh.bagpurchase
## X-squared = 5.9248, df = NA, p-value = 0.4358
```

```
chi.veh.bagdisp <- chisq.test(veh.bagdisp)
```

```
## Warning in chisq.test(veh.bagdisp): Chi-squared approximation may be incorrect
```

```
chi.veh.bagdisp.sim <- chisq.test(veh.bagdisp, simulate.p.value = TRUE)
chi.veh.bagdisp.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data: veh.bagdisp
## X-squared = 12.466, df = NA, p-value = 0.1219
```

Simulated residuals

```
chi.veh.barrier.sim$residuals
```

```
##
## Council collection Unclear information Difficult transport
## No vehicle -0.84556365 -0.06780959 2.92817286
## 1 or more vehicles 0.54696905 0.04386394 -1.89414473
##
## No local facilities No support Ends up in landfills
## No vehicle -0.10114358 -1.00245461 -0.23556966
## 1 or more vehicles 0.06542666 0.64845698 0.15238275
##
## Forgetting Recycling a hassle Household disagrees
## No vehicle -0.13808619 0.02911113 0.43227816
## 1 or more vehicles 0.08932370 -0.01883109 -0.27962741
##
## Recycling not important Other
## No vehicle -1.21449578 1.67544580
## 1 or more vehicles 0.78561987 -1.08379423
##
## Already doing everything
## No vehicle -0.19875093
## 1 or more vehicles 0.12856585
```

```
chi.veh.barrier2.sim$residuals
```

```
##
## Limited alternatives No SUP-free alternatives
## No vehicle 0.6695559 0.1847231
## 1 or more vehicles -0.4331151 -0.1194917
##
## Alternatives expensive Limited functioning
## No vehicle 0.3844238 -0.7385237
## 1 or more vehicles -0.2486719 0.4777282
##
## Forgetting reusables Reducing not important Other
## No vehicle 2.0960010 -1.4476727 -0.2343400
## 1 or more vehicles -1.3558384 0.9364548 0.1515873
##
## No barriers
## No vehicle -2.2706678
## 1 or more vehicles 1.4688250
```

``` chi.veh.mainconsid.sim$residuals ```

```
##
##          Value for money      Price      Quality Deals/discounts
## No vehicle      0.82616769  1.00667395 -0.58095082      -1.32516020
## 1 or more vehicles      -0.53442240 -0.65118634  0.37579917      0.85720527
##
##          Use-by-dates/longevity Convenience
## No vehicle      -0.55603665  1.19355614
## 1 or more vehicles      0.35968296 -0.77207467
##
##          Ease of recycling packaging Sustainability      Brand
## No vehicle      -0.97741050      0.08425608 -1.08627805
## 1 or more vehicles      0.63225671      -0.05450266  0.70267977
##
##          Ethics      Other
## No vehicle      -0.39110881 -0.76811457
## 1 or more vehicles      0.25299623  0.49686963
```

``` chi.veh.litter.sim$residuals ```

```
##
##          Strongly agree      Agree Neither agree nor disagree
## No vehicle      0.2750607  0.6089948      -1.6780001
## 1 or more vehicles      -0.1779283 -0.3939400      1.0854465
##
##          Disagree Strongly disagree
## No vehicle      -0.8852846      1.6754458
## 1 or more vehicles      0.5726633      -1.0837942
```

``` chi.veh.actions.sim$residuals ```

```
##
##          Yes, definitely Yes, probably No, probably not
## No vehicle      -0.4465218  0.8865850      -0.1923292
## 1 or more vehicles      0.2888412 -0.5735045      0.1244119
##
##          No, definitely not I don't know
## No vehicle      -0.6911336 -0.9370298
## 1 or more vehicles      0.4470730  0.6061357
```

``` chi.veh.zerow.sim$residuals ```

```
##
##          Yes, shops regularly Yes, shops occasionally
## No vehicle      -1.0481045      -0.2857244
## 1 or more vehicles      0.6779865      0.1848263
##
##          Yes, visited at least once Yes, never visited
## No vehicle      -1.1575349      0.4003850
## 1 or more vehicles      0.7487736      -0.2589967
```

```
##
##          No, but would like to shop there
## No vehicle          0.3305473
## 1 or more vehicles  -0.2138208
##
##          No, not likely to shop there
## No vehicle          0.3646115
## 1 or more vehicles  -0.2358559
```

```
chi.veh.bottpurchase.sim$residuals
```

```
##
##          None          1-2          3-5          6-10
## No vehicle          1.30747525  0.72122048  0.07475400 -1.24779053
## 1 or more vehicles -0.84576542 -0.46653529 -0.04835606  0.80715722
##
##          11-15          16+ I don't know
## No vehicle          1.43400931 -2.03224014 -0.55311138
## 1 or more vehicles -0.92761640  1.31459348  0.35779070
```

```
chi.veh.bottdisp.sim$residuals
```

```
##
##          General waste bin Recycling bin Recycling centre
## No vehicle          1.4297189  0.3293799  -1.7175564
## 1 or more vehicles  -0.9248411  -0.2130657  1.1110343
##
##          Specialist waste collection Landfill
## No vehicle          -1.4370108 -1.2144958
## 1 or more vehicles  0.9295580  0.7856199
##
##          Deposit return scheme Indefinite storage Other
## No vehicle          -0.1657034  -0.7916942  1.8356636
## 1 or more vehicles  0.1071884  0.5121225 -1.1874342
##
##          I don't know
## No vehicle          -0.5431390
## 1 or more vehicles  0.3513399
```

```
chi.veh.tubspurchase.sim$residuals
```

```
##
##          None          1-2          3-5          6-10
## No vehicle          1.30747525  0.55629706 -0.02848346 -0.61407957
## 1 or more vehicles -0.84576542 -0.35985141  0.01842507  0.39722914
##
##          11-15          16+ I don't know
## No vehicle          -0.18975052 -0.93702976  0.02911113
## 1 or more vehicles  0.12274376  0.60613566 -0.01883109
```

`chi.veh.tubdisp.sim$residuals`

```
##
##          General waste bin Recycling bin Recycling centre
## No vehicle          -0.07345840    1.23644567    -0.87353618
## 1 or more vehicles    0.04751798   -0.79981858    0.56506362
##
##          Specialist waste collection    Landfill
## No vehicle          -1.34999477 -0.94074439
## 1 or more vehicles    0.87326999  0.60853854
##
##          Deposit return scheme Indefinite storage    Other
## No vehicle          -1.08627805    -0.96308373 -0.04523279
## 1 or more vehicles    0.70267977    0.62298917  0.02925969
##
##          I don't know
## No vehicle          0.92452461
## 1 or more vehicles -0.59804647
```

`chi.veh.filmpurchase.sim$residuals`

```
##
##          None          1-2          3-5          6-10          11-15
## No vehicle          1.8389693 -0.1566910 -0.4984026 -0.2312230  1.0303953
## 1 or more vehicles -1.1895725  0.1013586  0.3224012  0.1495710 -0.6665309
##
##          16+ I don't know
## No vehicle          -1.0024546  0.2444872
## 1 or more vehicles  0.6484570  -0.1581513
```

`chi.veh.filmreuse.sim$residuals`

```
##
##          Never          Once    2-4 times    5-10 times
## No vehicle          0.04554247  0.30616996 -0.48355894 -0.28700676
## 1 or more vehicles -0.02946002 -0.19805191  0.31279937  0.18565582
##
##          More often
## No vehicle          0.27334505
## 1 or more vehicles -0.17681848
```

`chi.veh.filmdisp.sim$residuals`

```
##
##          General waste bin Recycling bin Recycling centre
## No vehicle          -0.472196251  0.932891954  -0.006698164
## 1 or more vehicles    0.305449195  -0.603459039    0.004332836
##
##          Specialist waste collection    Landfill
## No vehicle          -0.578767442 -0.940744386
## 1 or more vehicles    0.374386812  0.608538535
```

```
##
##          Deposit return scheme Indefinite storage      Other
## No vehicle          -0.768114575      0.122243621  0.924524614
## 1 or more vehicles      0.496869633      -0.079075629 -0.598046465
##
##          I don't know
## No vehicle          0.172878586
## 1 or more vehicles -0.111829827
```

```
chi.veh.bagpurchase.sim$residuals
```

```
##
##          None      1-2      3-5      6-10
## No vehicle      -0.53669552  0.47943511  0.64998863  0.16684350
## 1 or more vehicles  0.34717178 -0.31013179 -0.42045760 -0.10792591
##
##          11-15      16+ I don't know
## No vehicle      0.92016684 -1.53622915  -0.04523279
## 1 or more vehicles -0.59522756  0.99373927  0.02925969
```

```
chi.veh.bagdisp.sim$residuals
```

```
##
##          General waste bin Recycling bin Recycling centre
## No vehicle      -1.56812979      1.70070426      0.15214231
## 1 or more vehicles  1.01437481      -1.10013315      -0.09841617
##
##          Specialist waste collection      Landfill
## No vehicle      0.41660452 -0.76811457
## 1 or more vehicles -0.26948861  0.49686963
##
##          Deposit return scheme Indefinite storage      Other
## No vehicle      -0.69113359      0.10407758 -0.30136633
## 1 or more vehicles  0.44707301      -0.06732458  0.19494459
##
##          I don't know
## No vehicle      1.43916499
## 1 or more vehicles -0.93095145
```

Simulated observed and expected values

```
chi.veh.barrier.sim$observed
```

```
##
##          Council collection Unclear information Difficult transport
## No vehicle          29          18          18
## 1 or more vehicles      86          44          13
##
##          No local facilities No support Ends up in landfills
## No vehicle          10          3          9
## 1 or more vehicles      25          15          24
##
```

```
##
##          Forgetting Recycling a hassle Household disagrees
## No vehicle          7          3          2
## 1 or more vehicles  18          7          3
##
##          Recycling not important Other Already doing everything
## No vehicle          0          3          16
## 1 or more vehicles  5          1          41
```

```
chi.veh.barrier.sim$expected
```

```
##
##          Council collection Unclear information Difficult transport
## No vehicle          33.925          18.29          9.145
## 1 or more vehicles  81.075          43.71          21.855
##
##          No local facilities No support Ends up in landfills
## No vehicle          10.325          5.31          9.735
## 1 or more vehicles  24.675          12.69          23.265
##
##          Forgetting Recycling a hassle Household disagrees
## No vehicle          7.375          2.95          1.475
## 1 or more vehicles  17.625          7.05          3.525
##
##          Recycling not important Other Already doing everything
## No vehicle          1.475  1.18          16.815
## 1 or more vehicles  3.525  2.82          40.185
```

```
chi.veh.barrier2.sim$observed
```

```
##
##          Limited alternatives No SUP-free alternatives
## No vehicle          30          26
## 1 or more vehicles  60          59
##
##          Alternatives expensive Limited functioning
## No vehicle          27          9
## 1 or more vehicles  58          30
##
##          Forgetting reusables Reducing not important Other
## No vehicle          19          1          2
## 1 or more vehicles  21          12          6
##
##          No barriers
## No vehicle          4
## 1 or more vehicles  36
```

```
chi.veh.barrier2.sim$expected
```

```
##
##          Limited alternatives No SUP-free alternatives
## No vehicle          26.55          25.075
## 1 or more vehicles  63.45          59.925
```

```
##
## Alternatives expensive Limited functioning
## No vehicle 25.075 11.505
## 1 or more vehicles 59.925 27.495
##
## Forgetting reusables Reducing not important Other
## No vehicle 11.8 3.835 2.36
## 1 or more vehicles 28.2 9.165 5.64
##
## No barriers
## No vehicle 11.8
## 1 or more vehicles 28.2
```

```
chi.veh.mainconsid.sim$observed
```

```
##
## Value for money Price Quality Deals/discounts
## No vehicle 40 34 23 4
## 1 or more vehicles 79 63 65 22
##
## Use-by-dates/longevity Convenience
## No vehicle 3 5
## 1 or more vehicles 11 5
##
## Ease of recycling packaging Sustainability Brand Ethics
## No vehicle 4 4 0 1
## 1 or more vehicles 18 9 4 4
##
## Other
## No vehicle 0
## 1 or more vehicles 2
```

```
chi.veh.mainconsid.sim$expected
```

```
##
## Value for money Price Quality Deals/discounts
## No vehicle 35.105 28.615 25.96 7.67
## 1 or more vehicles 83.895 68.385 62.04 18.33
##
## Use-by-dates/longevity Convenience
## No vehicle 4.13 2.95
## 1 or more vehicles 9.87 7.05
##
## Ease of recycling packaging Sustainability Brand Ethics
## No vehicle 6.49 3.835 1.18 1.475
## 1 or more vehicles 15.51 9.165 2.82 3.525
##
## Other
## No vehicle 0.59
## 1 or more vehicles 1.41
```

```
chi.veh.litter.sim$observed
```

```
##
##           Strongly agree Agree Neither agree nor disagree Disagree
## No vehicle           53    52                      9      1
## 1 or more vehicles    120   110                    44      7
##
##           Strongly disagree
## No vehicle           3
## 1 or more vehicles    1
```

```
chi.veh.litter.sim$expected
```

```
##
##           Strongly agree Agree Neither agree nor disagree Disagree
## No vehicle      51.035  47.79                      15.635    2.36
## 1 or more vehicles 121.965 114.21                    37.365    5.64
##
##           Strongly disagree
## No vehicle      1.18
## 1 or more vehicles 2.82
```

```
chi.veh.actions.sim$observed
```

```
##
##           Yes, definitely Yes, probably No, probably not
## No vehicle           39          63          12
## 1 or more vehicles    103         128          31
##
##           No, definitely not I don't know
## No vehicle           2          2
## 1 or more vehicles    9          11
```

```
chi.veh.actions.sim$expected
```

```
##
##           Yes, definitely Yes, probably No, probably not
## No vehicle      41.89      56.345      12.685
## 1 or more vehicles 100.11    134.655      30.315
##
##           No, definitely not I don't know
## No vehicle      3.245      3.835
## 1 or more vehicles 7.755      9.165
```

```
chi.veh.zerow.sim$observed
```

```
##
##           Yes, shops regularly Yes, shops occasionally
## No vehicle           2          8
## 1 or more vehicles    12         22
```

```
##
##          Yes, visited at least once Yes, never visited
## No vehicle          4          28
## 1 or more vehicles  20          60
##
##          No, but would like to shop there
## No vehicle          54
## 1 or more vehicles 121
##
##          No, not likely to shop there
## No vehicle          22
## 1 or more vehicles  47
```

```
chi.veh.zerow.sim$expected
```

```
##
##          Yes, shops regularly Yes, shops occasionally
## No vehicle          4.13          8.85
## 1 or more vehicles  9.87          21.15
##
##          Yes, visited at least once Yes, never visited
## No vehicle          7.08          25.96
## 1 or more vehicles 16.92          62.04
##
##          No, but would like to shop there
## No vehicle          51.625
## 1 or more vehicles 123.375
##
##          No, not likely to shop there
## No vehicle          20.355
## 1 or more vehicles  48.645
```

```
chi.veh.bottpurchase.sim$observed
```

```
##
##          None 1-2 3-5 6-10 11-15 16+ I don't know
## No vehicle          6 45 40 16 9 0 2
## 1 or more vehicles  6 92 94 58 10 14 8
```

```
chi.veh.bottpurchase.sim$expected
```

```
##
##          None 1-2 3-5 6-10 11-15 16+ I don't know
## No vehicle          3.54 40.415 39.53 21.83 5.605 4.13 2.95
## 1 or more vehicles  8.46 96.585 94.47 52.17 13.395 9.87 7.05
```

```
chi.veh.bottdisp.sim$observed
```

```
##
##          General waste bin Recycling bin Recycling centre
## No vehicle          12          100          0
```

##	1 or more vehicles	15	228	10
##				
##		Specialist waste collection	Landfill	Deposit return scheme
##	No vehicle	0	0	1
##	1 or more vehicles	7	5	3
##				
##		Indefinite storage	Other	I don't know
##	No vehicle	3	2	0
##	1 or more vehicles	13	0	1

chi.veh.bottdisp.sim\$expected

##				
##		General waste bin	Recycling bin	Recycling centre
##	No vehicle	7.965	96.76	2.95
##	1 or more vehicles	19.035	231.24	7.05
##				
##		Specialist waste collection	Landfill	Deposit return scheme
##	No vehicle	2.065	1.475	1.18
##	1 or more vehicles	4.935	3.525	2.82
##				
##		Indefinite storage	Other	I don't know
##	No vehicle	4.72	0.59	0.295
##	1 or more vehicles	11.28	1.41	0.705

chi.veh.tubspurchase.sim\$observed

##							
##		None	1-2	3-5	6-10	11-15	16+ I don't know
##	No vehicle	6	35	42	22	8	2 3
##	1 or more vehicles	6	73	101	63	21	11 7

chi.veh.tubspurchase.sim\$expected

##							
##		None	1-2	3-5	6-10	11-15	16+ I don't know
##	No vehicle	3.54	31.86	42.185	25.075	8.555	3.835 2.95
##	1 or more vehicles	8.46	76.14	100.815	59.925	20.445	9.165 7.05

chi.veh.tubdisp.sim\$observed

##				
##		General waste bin	Recycling bin	Recycling centre
##	No vehicle	25	72	6
##	1 or more vehicles	61	139	23
##				
##		Specialist waste collection	Landfill	Deposit return scheme
##	No vehicle	1	0	0
##	1 or more vehicles	11	3	4
##				
##		Indefinite storage	Other	I don't know
##	No vehicle	9	2	3
##	1 or more vehicles	33	5	3

```
chi.veh.tubdisp.sim$expected
```

```
##
##           General waste bin Recycling bin Recycling centre
## No vehicle           25.37           62.245           8.555
## 1 or more vehicles    60.63          148.755          20.445
##
##           Specialist waste collection Landfill Deposit return scheme
## No vehicle           3.54           0.885           1.18
## 1 or more vehicles    8.46           2.115           2.82
##
##           Indefinite storage Other I don't know
## No vehicle           12.39 2.065           1.77
## 1 or more vehicles    29.61 4.935           4.23
```

```
chi.veh.filmpurchase.sim$observed
```

```
##
##           None 1-2 3-5 6-10 11-15 16+ I don't know
## No vehicle           7 24 33 32 15 3 4
## 1 or more vehicles    5 60 89 81 24 15 8
```

```
chi.veh.filmpurchase.sim$expected
```

```
##
##           None 1-2 3-5 6-10 11-15 16+ I don't know
## No vehicle           3.54 24.78 35.99 33.335 11.505 5.31 3.54
## 1 or more vehicles    8.46 59.22 86.01 79.665 27.495 12.69 8.46
```

```
chi.veh.filmreuse.sim$observed
```

```
##
##           Never Once 2-4 times 5-10 times More often
## No vehicle           70 26 14 3 5
## 1 or more vehicles    166 57 40 9 10
```

```
chi.veh.filmreuse.sim$expected
```

```
##
##           Never Once 2-4 times 5-10 times More often
## No vehicle           69.62 24.485 15.93 3.54 4.425
## 1 or more vehicles    166.38 58.515 38.07 8.46 10.575
```

```
chi.veh.filmdisp.sim$observed
```

```
##
##           General waste bin Recycling bin Recycling centre
## No vehicle           74 32 5
## 1 or more vehicles    191 60 12
```

```
##
##          Specialist waste collection Landfill Deposit return scheme
## No vehicle          1          0          0
## 1 or more vehicles    5          3          2
##
##          Indefinite storage Other I don't know
## No vehicle          1          3          2
## 1 or more vehicles    2          3          4
```

```
chi.veh.filmdisp.sim$expected
```

```
##
##          General waste bin Recycling bin Recycling centre
## No vehicle          78.175        27.14        5.015
## 1 or more vehicles   186.825        64.86        11.985
##
##          Specialist waste collection Landfill Deposit return scheme
## No vehicle          1.77         0.885         0.59
## 1 or more vehicles   4.23         2.115         1.41
##
##          Indefinite storage Other I don't know
## No vehicle          0.885        1.77         1.77
## 1 or more vehicles   2.115        4.23         4.23
```

```
chi.veh.bagpurchase.sim$observed
```

```
##
##          None 1-2 3-5 6-10 11-15 16+ I don't know
## No vehicle          64 25 15 6 6 0 2
## 1 or more vehicles  168 52 28 13 8 8 5
```

```
chi.veh.bagpurchase.sim$expected
```

```
##
##          None 1-2 3-5 6-10 11-15 16+ I don't know
## No vehicle          68.44 22.715 12.685 5.605 4.13 2.36 2.065
## 1 or more vehicles  163.56 54.285 30.315 13.395 9.87 5.64 4.935
```

```
chi.veh.bagdisp.sim$observed
```

```
##
##          General waste bin Recycling bin Recycling centre
## No vehicle          32          36          9
## 1 or more vehicles   111         56         20
##
##          Specialist waste collection Landfill Deposit return scheme
## No vehicle          3          0          2
## 1 or more vehicles    5          2          9
##
##          Indefinite storage Other I don't know
## No vehicle          25          6          5
## 1 or more vehicles   58         17          4
```

```
chi.veh.bagdisp.sim$expected
```

```
##
##           General waste bin Recycling bin Recycling centre
## No vehicle           42.185           27.14           8.555
## 1 or more vehicles    100.815           64.86           20.445
##
##           Specialist waste collection Landfill Deposit return scheme
## No vehicle           2.36           0.59           3.245
## 1 or more vehicles    5.64           1.41           7.755
##
##           Indefinite storage Other I don't know
## No vehicle           24.485  6.785           2.655
## 1 or more vehicles    58.515 16.215           6.345
```

Living situation

```
chi.liv.choice <- chisq.test(liv.choice)
```

```
## Warning in chisq.test(liv.choice): Chi-squared approximation may be incorrect
```

```
chi.liv.choice.sim <- chisq.test(liv.choice, simulate.p.value = TRUE)
chi.liv.choice.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data:  liv.choice
## X-squared = 12.732, df = NA, p-value = 0.3708
```

```
chi.liv.barrier <- chisq.test(liv.barrier)
```

```
## Warning in chisq.test(liv.barrier): Chi-squared approximation may be incorrect
```

```
chi.liv.barrier.sim <- chisq.test(liv.barrier, simulate.p.value = TRUE)
chi.liv.barrier.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data:  liv.barrier
## X-squared = 40.949, df = NA, p-value = 0.5457
```

```
chi.liv.barrier2 <- chisq.test(liv.barrier2)
```

```
## Warning in chisq.test(liv.barrier2): Chi-squared approximation may be incorrect
```

```
chi.liv.barrier2.sim <- chisq.test(liv.barrier2, simulate.p.value = TRUE)
chi.liv.barrier2.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data:  liv.barrier2
## X-squared = 37.905, df = NA, p-value = 0.1119
```

```
chi.liv.mainconsid <- chisq.test(liv.mainconsid)
```

```
## Warning in chisq.test(liv.mainconsid): Chi-squared approximation may be
## incorrect
```

```
chi.liv.mainconsid.sim <- chisq.test(liv.mainconsid, simulate.p.value =
TRUE)
chi.liv.mainconsid.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data:  liv.mainconsid
## X-squared = 40.941, df = NA, p-value = 0.3808
```

```
chi.liv.litter <- chisq.test(liv.litter)
```

```
## Warning in chisq.test(liv.litter): Chi-squared approximation may be incorrect
```

```
chi.liv.litter.sim <- chisq.test(liv.litter, simulate.p.value = TRUE)
chi.liv.litter.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data:  liv.litter
## X-squared = 25.046, df = NA, p-value = 0.1104
```

```
chi.liv.attitude <- chisq.test(liv.attitude)
```

```
## Warning in chisq.test(liv.attitude): Chi-squared approximation may be incorrect
```

```
chi.liv.attitude.sim <- chisq.test(liv.attitude, simulate.p.value = TRUE)
chi.liv.attitude.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data: liv.attitude
## X-squared = 33.337, df = NA, p-value = 0.09595
```

```
chi.liv.ocean <- chisq.test(liv.ocean)
```

```
## Warning in chisq.test(liv.ocean): Chi-squared approximation may be incorrect
```

```
chi.liv.ocean.sim <- chisq.test(liv.ocean, simulate.p.value = TRUE)
chi.liv.ocean.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data: liv.ocean
## X-squared = 27.124, df = NA, p-value = 0.04498
```

```
chi.liv.actions <- chisq.test(liv.actions)
```

```
## Warning in chisq.test(liv.actions): Chi-squared approximation may be incorrect
```

```
chi.liv.actions.sim <- chisq.test(liv.actions, simulate.p.value = TRUE)
chi.liv.actions.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data: liv.actions
## X-squared = 14.949, df = NA, p-value = 0.5032
```

```
chi.liv.attplast <- chisq.test(liv.attplast)
```

```
## Warning in chisq.test(liv.attplast): Chi-squared approximation may be incorrect
```

```
chi.liv.attplast.sim <- chisq.test(liv.attplast, simulate.p.value = TRUE)
chi.liv.attplast.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data: liv.attplast
## X-squared = 15.685, df = NA, p-value = 0.2029
```

```
chi.liv.zerow <- chisq.test(liv.zerow)
```

```
## Warning in chisq.test(liv.zerow): Chi-squared approximation may be incorrect
```

```
chi.liv.zerow.sim <- chisq.test(liv.zerow, simulate.p.value = TRUE)
chi.liv.zerow.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data:  liv.zerow
## X-squared = 20.788, df = NA, p-value = 0.4043
```

```
chi.liv.bottpurchase <- chisq.test(liv.bottpurchase)
```

```
## Warning in chisq.test(liv.bottpurchase): Chi-squared approximation may be
## incorrect
```

```
chi.liv.bottpurchase.sim <- chisq.test(liv.bottpurchase, simulate.p.value =
TRUE)
chi.liv.bottpurchase.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data:  liv.bottpurchase
## X-squared = 29.057, df = NA, p-value = 0.2244
```

```
chi.liv.bottreuse <- chisq.test(liv.bottreuse)
```

```
## Warning in chisq.test(liv.bottreuse): Chi-squared approximation may be incorrect
```

```
chi.liv.bottreuse.sim <- chisq.test(liv.bottreuse, simulate.p.value = TRUE)
chi.liv.bottreuse.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data:  liv.bottreuse
## X-squared = 17.753, df = NA, p-value = 0.3318
```

```
chi.liv.bottdisp <- chisq.test(liv.bottdisp)
```

```
## Warning in chisq.test(liv.bottdisp): Chi-squared approximation may be incorrect
```

```
chi.liv.bottdisp.sim <- chisq.test(liv.bottdisp, simulate.p.value = TRUE)
chi.liv.bottdisp.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data:  liv.bottdisp
## X-squared = 40.696, df = NA, p-value = 0.1804
```

```
chi.liv.tubspurchase <- chisq.test(liv.tubspurchase)
```

```
## Warning in chisq.test(liv.tubspurchase): Chi-squared approximation may be
## incorrect
```

```
chi.liv.tubspurchase.sim <- chisq.test(liv.tubspurchase, simulate.p.value =
TRUE)
chi.liv.tubspurchase.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data:  liv.tubspurchase
## X-squared = 34.559, df = NA, p-value = 0.08696
```

```
chi.liv.tubreuse <- chisq.test(liv.tubreuse)
```

```
## Warning in chisq.test(liv.tubreuse): Chi-squared approximation may be incorrect
```

```
chi.liv.tubreuse.sim <- chisq.test(liv.tubreuse, simulate.p.value = TRUE)
chi.liv.tubreuse.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data:  liv.tubreuse
## X-squared = 14.717, df = NA, p-value = 0.5687
```

```
chi.liv.tubdisp <- chisq.test(liv.tubdisp)
```

```
## Warning in chisq.test(liv.tubdisp): Chi-squared approximation may be incorrect
```

```
chi.liv.tubdisp.sim <- chisq.test(liv.tubdisp, simulate.p.value = TRUE)
chi.liv.tubdisp.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data: liv.tubdisp
## X-squared = 42.502, df = NA, p-value = 0.1559
```

```
chi.liv.filmpurchase <- chisq.test(liv.filmpurchase)
```

```
## Warning in chisq.test(liv.filmpurchase): Chi-squared approximation may be
## incorrect
```

```
chi.liv.filmpurchase.sim <- chisq.test(liv.filmpurchase, simulate.p.value =
TRUE)
chi.liv.filmpurchase.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data: liv.filmpurchase
## X-squared = 49.377, df = NA, p-value = 0.007496
```

```
chi.liv.filmreuse <- chisq.test(liv.filmreuse)
```

```
## Warning in chisq.test(liv.filmreuse): Chi-squared approximation may be incorrect
```

```
chi.liv.filmreuse.sim <- chisq.test(liv.filmreuse, simulate.p.value = TRUE)
chi.liv.filmreuse.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data: liv.filmreuse
## X-squared = 22.886, df = NA, p-value = 0.1359
```

```
chi.liv.filmdisp <- chisq.test(liv.filmdisp)
```

```
## Warning in chisq.test(liv.filmdisp): Chi-squared approximation may be incorrect
```

```
chi.liv.filmdisp.sim <- chisq.test(liv.filmdisp, simulate.p.value = TRUE)
chi.liv.filmdisp.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data: liv.filmdisp
## X-squared = 25.955, df = NA, p-value = 0.6127
```

```
chi.liv.bagpurchase <- chisq.test(liv.bagpurchase)
```

```
## Warning in chisq.test(liv.bagpurchase): Chi-squared approximation may be  
## incorrect
```

```
chi.liv.bagpurchase.sim <- chisq.test(liv.bagpurchase, simulate.p.value =  
TRUE)  
chi.liv.bagpurchase.sim
```

```
##  
## Pearson's Chi-squared test with simulated p-value (based on 2000  
## replicates)  
##  
## data: liv.bagpurchase  
## X-squared = 44.402, df = NA, p-value = 0.02099
```

```
chi.liv.bagreuse <- chisq.test(liv.bagreuse)
```

```
## Warning in chisq.test(liv.bagreuse): Chi-squared approximation may be incorrect
```

```
chi.liv.bagreuse.sim <- chisq.test(liv.bagreuse, simulate.p.value = TRUE)  
chi.liv.bagreuse.sim
```

```
##  
## Pearson's Chi-squared test with simulated p-value (based on 2000  
## replicates)  
##  
## data: liv.bagreuse  
## X-squared = 34.492, df = NA, p-value = 0.005997
```

```
chi.liv.bagdisp <- chisq.test(liv.bagdisp)
```

```
## Warning in chisq.test(liv.bagdisp): Chi-squared approximation may be incorrect
```

```
chi.liv.bagdisp.sim <- chisq.test(liv.bagdisp, simulate.p.value = TRUE)  
chi.liv.bagdisp.sim
```

```
##  
## Pearson's Chi-squared test with simulated p-value (based on 2000  
## replicates)  
##  
## data: liv.bagdisp  
## X-squared = 42.832, df = NA, p-value = 0.1144
```

Simulated residuals for 'living situation'

```
chi.liv.choice.sim$residuals
```

```
##
##
## Always As often as they can
## I live alone -0.17831388 -0.55518233
## I live with my parents/family 0.46866428 -0.87771127
## I live in a house-/ flat-share 1.11900577 0.04385290
## I live with my partner/children -0.50411756 0.78295308
## Other -0.67823300 -0.05547002
##
## If cheaper or preferred Rarely or never
## I live alone 0.25555302 1.18014983
## I live with my parents/family 1.61475825 -1.44445073
## I live in a house-/ flat-share -0.76338629 0.00000000
## I live with my partner/children -0.60691739 -0.24394065
## Other -0.14855627 1.27801930
```

```
chi.liv.barrier.sim$residuals
```

```
##
## Council collection Unclear information
## I live alone -0.08749831 -1.12810581
## I live with my parents/family -1.21762858 1.45647478
## I live in a house-/ flat-share -0.14744196 0.32128773
## I live with my partner/children 0.73638039 -0.17664868
## Other -0.13987572 0.48260048
##
## Difficult transport No local facilities
## I live alone 1.07482345 -0.37007637
## I live with my parents/family 0.52688774 -0.21893874
## I live in a house-/ flat-share -0.62475802 0.80178373
## I live with my partner/children -0.61716358 -0.14766799
## Other -0.55677644 1.09870053
##
## No support Ends up in landfills Forgetting
## I live alone 0.42266694 -2.02904145 0.52128604
## I live with my parents/family 1.12546771 -0.58867430 1.01520306
## I live in a house-/ flat-share -0.59628479 0.93581920 -0.31622777
## I live with my partner/children -0.51195667 1.29474146 -0.90787504
## Other -0.42426407 -0.57445626 1.50000000
##
## Recycling a hassle Household disagrees
## I live alone 1.12094680 -0.13987572
## I live with my parents/family 1.52768568 0.45401261
## I live in a house-/ flat-share 0.00000000 0.70710678
## I live with my partner/children -1.44089337 -0.40601406
## Other -0.31622777 -0.22360680
##
## Recycling not important Other
## I live alone 0.79262909 -0.95916630
## I live with my parents/family 0.45401261 -0.71414284
## I live in a house-/ flat-share -0.70710678 0.94868330
## I live with my partner/children -0.40601406 0.59611418
## Other -0.22360680 -0.20000000
##
## Already doing everything
```

##	I live alone	1.35054019
##	I live with my parents/family	-1.58300035
##	I live in a house-/ flat-share	-0.71205164
##	I live with my partner/children	0.29903925
##	Other	-0.75498344

chi.liv.barrier2.sim\$residuals

##			
##		Limited alternatives	No SUP-free alternatives
##	I live alone	1.60449249	-1.02905365
##	I live with my parents/family	-1.32104220	0.04936155
##	I live in a house-/ flat-share	-1.00000000	0.85749293
##	I live with my partner/children	0.15528425	0.25825905
##	Other	-0.94868330	0.16269784
##			
##		Alternatives expensive	Limited functioning
##	I live alone	-1.02905365	0.01001671
##	I live with my parents/family	1.87194195	0.01233233
##	I live in a house-/ flat-share	-0.51449576	0.55700665
##	I live with my partner/children	-0.03901755	-0.16841713
##	Other	0.16269784	-0.62449980
##			
##		Forgetting reusables	Reducing not important
##	I live alone	0.26375219	-1.15084671
##	I live with my parents/family	0.39852670	1.81950323
##	I live in a house-/ flat-share	0.50000000	1.49099863
##	I live with my partner/children	-0.49835410	-1.11076718
##	Other	-0.63245553	2.41294585
##			
##		Other	No barriers
##	I live alone	-0.61925622	1.25282290
##	I live with my parents/family	-1.00995049	-1.81551052
##	I live in a house-/ flat-share	0.22360680	-1.00000000
##	I live with my partner/children	0.84303275	0.36834868
##	Other	-0.28284271	0.94868330

chi.liv.mainconsid.sim\$residuals

##				
##		Value for money	Price	Quality
##	I live alone	-0.26186844	-1.33591730	1.50259328
##	I live with my parents/family	-0.04428540	1.60162279	-1.55838254
##	I live in a house-/ flat-share	1.47841614	-0.22475645	-1.61807967
##	I live with my partner/children	-0.67427765	0.18749215	0.60478248
##	Other	1.65922428	0.03046038	-0.93808315
##				
##		Deals/discounts	Use-by-dates/longevity	
##	I live alone	-0.40075180		-0.12260121
##	I live with my parents/family	-0.17300904		-1.33603892
##	I live in a house-/ flat-share	0.86824314		0.50709255
##	I live with my partner/children	0.04165673		0.56585435
##	Other	-0.50990195		-0.37416574

```
##
## Convenience Ease of recycling packaging
## I live alone 1.12094680 -0.02667325
## I live with my parents/family -0.24354409 -0.48065055
## I live in a house-/ flat-share -1.00000000 0.53935989
## I live with my partner/children -0.14083920 0.08326715
## Other -0.31622777 -0.46904158
##
## Sustainability Brand Ethics
## I live alone -0.57253178 -0.95916630 0.79262909
## I live with my parents/family 1.04276759 2.08641733 0.45401261
## I live in a house-/ flat-share -0.26311741 -0.63245553 -0.70710678
## I live with my partner/children 0.02945576 -0.08907453 -0.40601406
## Other -0.36055513 -0.20000000 -0.22360680
##
## Other
## I live alone 2.27060612
## I live with my parents/family -0.50497525
## I live in a house-/ flat-share -0.44721360
## I live with my partner/children -1.03198837
## Other -0.14142136
```

```
chi.liv.litter.sim$residuals
```

```
##
## Strongly agree Agree
## I live alone -1.39348374 0.94035203
## I live with my parents/family 0.20067959 -0.58418705
## I live in a house-/ flat-share -0.55297409 -0.54659439
## I live with my partner/children 1.23749138 -0.13619878
## Other -1.31529464 0.29855620
##
## Neither agree nor disagree Disagree
## I live alone 0.51841400 0.85516335
## I live with my parents/family 0.47797301 -0.01980295
## I live in a house-/ flat-share 0.73843281 2.45967478
## I live with my partner/children -1.17129736 -1.57947516
## Other 2.01920029 -0.28284271
##
## Strongly disagree
## I live alone 0.08340577
## I live with my parents/family 0.68613724
## I live in a house-/ flat-share 0.94868330
## I live with my partner/children -0.77426324
## Other -0.20000000
```

```
chi.liv.attitude.sim$residuals
```

```
##
## 1 (Not concerned) 2 3
## I live alone -0.08427010 -0.27975144 -0.14002727
## I live with my parents/family 2.45634691 -0.34442336 -0.09950259
## I live in a house-/ flat-share 1.39973542 0.00000000 1.43220792
```

```
## I live with my partner/children -1.94566260 0.41367470 -0.60620314
## Other 1.40488566 -0.44721360 0.92142520
##
## 4 5 6
## I live alone -0.19279765 -0.23825580 -0.24520241
## I live with my parents/family 1.53811129 -0.40262511 -0.42663428
## I live in a house-/ flat-share -0.48115159 -1.59934197 -0.67612340
## I live with my partner/children -0.46072184 1.06464338 0.76545993
## Other 0.31601110 -0.13112201 -0.74833148
##
## 7 (Very concerned
## I live alone 1.03672027
## I live with my parents/family -1.95461452
## I live in a house-/ flat-share 1.18014983
## I live with my partner/children -0.12249324
## Other -0.83066239
```

```
chi.liv.ocean.sim$residuals
```

```
##
## Always Most of the time Sometimes
## I live alone -1.13372475 -1.21043401 0.58976782
## I live with my parents/family 1.65602459 0.47783448 0.09901475
## I live in a house-/ flat-share 0.07254763 1.11631261 0.00000000
## I live with my partner/children -0.03694037 0.08331347 -0.33915111
## Other -0.43588989 -0.03922323 -0.70710678
##
## Rarely Never
## I live alone 1.39979295 -0.46020678
## I live with my parents/family -0.95810952 -1.47224319
## I live in a house-/ flat-share -2.44948974 1.76401947
## I live with my partner/children 0.53959064 -0.01744918
## Other 0.51639778 2.01304569
```

```
chi.liv.actions.sim$residuals
```

```
##
## Yes, definitely Yes, probably
## I live alone 1.10938213 -0.89469311
## I live with my parents/family -1.19976581 0.53649316
## I live in a house-/ flat-share -0.31844694 0.20593294
## I live with my partner/children 0.15927433 0.02900343
## Other -1.19163753 1.51227093
##
## No, probably not No, definitely not
## I live alone 0.67094097 -0.96190276
## I live with my parents/family 0.22101464 -0.33987127
## I live in a house-/ flat-share 0.33756998 -0.09534626
## I live with my partner/children -0.60552128 0.88524744
## Other -0.65574385 -0.33166248
##
## I don't know
## I live alone -0.57253178
```

```
## I live with my parents/family 1.81950323
## I live in a house-/ flat-share -0.26311741
## I live with my partner/children -0.35061855
## Other -0.36055513
```

```
chi.liv.bottpurchase.sim$residuals
```

```
##
## None 1-2 3-5
## I live alone 1.34832155 2.04689623 -0.68809285
## I live with my parents/family -0.42847960 -0.59039380 -0.50442728
## I live in a house-/ flat-share -1.09544512 0.08105148 0.71026587
## I live with my partner/children -0.15428162 -0.93107269 0.31312192
## Other -0.34641016 -1.17046999 0.57015316
##
## 6-10 11-15 16+
## I live alone -1.45920636 -1.61208962 -0.12260121
## I live with my parents/family -0.14161795 1.01353202 2.40636702
## I live in a house-/ flat-share -0.51465024 0.07254763 -0.33806170
## I live with my partner/children 1.05060420 0.59183191 -0.89914073
## Other 1.46472025 -0.43588989 -0.37416574
##
## I don't know
## I live alone -0.19781414
## I live with my parents/family 0.64207079
## I live in a house-/ flat-share 0.00000000
## I live with my partner/children -0.14083920
## Other -0.31622777
```

```
chi.liv.bottreuse.sim$residuals
```

```
##
## Never Once 2-4 times 5-10 times
## I live alone 0.1657989 -0.5595264 -0.4901765 -0.5827484
## I live with my parents/family -0.3498145 0.2016642 0.6293842 -1.2120571
## I live in a house-/ flat-share -1.1634093 -0.2335497 -0.5290037 2.2199257
## I live with my partner/children 0.3565748 0.4815865 0.2784114 -0.0639826
## Other 1.5309483 -0.8124038 -0.2553308 0.5695489
##
## More often
## I live alone 1.4946564
## I live with my parents/family 0.3773990
## I live in a house-/ flat-share 0.1081125
## I live with my partner/children -1.0935734
## Other -0.8774964
```

```
chi.liv.bottdisp.sim$residuals
```

```
##
## General waste bin Recycling bin
## I live alone 0.31701608 -0.05065844
## I live with my parents/family 2.99531497 -1.51851635
```

##	I live in a house-/ flat-share	0.18257419	-0.13968606
##	I live with my partner/children	-1.94566260	0.85805737
##	Other	1.40488566	-0.15460414
##			
##		Recycling centre Specialist waste collection	
##	I live alone	0.46156633	-1.26885775
##	I live with my parents/family	0.64207079	1.17230231
##	I live in a house-/ flat-share	0.00000000	0.35856858
##	I live with my partner/children	-0.57419059	0.14114246
##	Other	-0.31622777	-0.26457513
##			
##		Landfill Deposit return scheme	
##	I live alone	-0.13987572	0.08340577
##	I live with my parents/family	0.45401261	0.68613724
##	I live in a house-/ flat-share	-0.70710678	-0.63245553
##	I live with my partner/children	0.20683735	-0.08907453
##	Other	-0.22360680	-0.20000000
##			
##		Indefinite storage	Other I don't know
##	I live alone	0.16681153	0.79618656 -0.47958315
##	I live with my parents/family	1.37227448	-0.50497525 -0.35707142
##	I live in a house-/ flat-share	-0.47434165	1.78885438 2.84604989
##	I live with my partner/children	-0.52074342	-1.03198837 -0.72972598
##	Other	-0.40000000	-0.14142136 -0.10000000

```
chi.liv.tubspurchase.sim$residuals
```

##		None	1-2	3-5
##	I live alone	0.746392289	1.637247602	0.367917562
##	I live with my parents/family	-0.428479604	-1.554922841	0.882328180
##	I live in a house-/ flat-share	-1.095445115	1.278019301	-1.401547596
##	I live with my partner/children	0.241312270	-0.858438733	0.097693701
##	Other	-0.346410162	-0.076980036	-1.195826074
##				
##		6-10	11-15	16+
##	I live alone	-1.707550556	-1.808231221	0.005783149
##	I live with my parents/family	0.049361552	0.677366385	0.266031956
##	I live in a house-/ flat-share	0.171498585	1.233162461	-0.263117406
##	I live with my partner/children	1.001450550	-0.112604169	0.029455759
##	Other	0.162697843	3.175390283	-0.360555128
##				
##		I don't know		
##	I live alone	0.461566331		
##	I live with my parents/family	0.642070792		
##	I live in a house-/ flat-share	0.000000000		
##	I live with my partner/children	-0.574190592		
##	Other	-0.316227766		

```
chi.liv.tubreuse.sim$residuals
```

##		Never	Once	2-4 times
----	--	-------	------	-----------

##	I live alone	1.32686749	-0.14002727	-1.12420299
##	I live with my parents/family	-0.63736704	-0.09950259	-0.67320763
##	I live in a house-/ flat-share	-0.85026515	-0.54325128	0.73848549
##	I live with my partner/children	-0.43557659	0.46388184	0.74405514
##	Other	1.77971263	-0.64031242	0.03046038
##				
##		5-10 times	More often	
##	I live alone	-0.91446808	0.71665459	
##	I live with my parents/family	0.22247760	0.88232818	
##	I live in a house-/ flat-share	0.49827288	-0.07933288	
##	I live with my partner/children	0.20063240	-0.70448332	
##	Other	0.55148702	-1.19582607	

chi.liv.tubdisp.sim\$residuals

##		General waste bin	Recycling bin
##	I live alone	-0.17538056	-0.36317452
##	I live with my parents/family	-0.29142244	-1.13799322
##	I live in a house-/ flat-share	-0.20459830	-0.02177002
##	I live with my partner/children	0.17806477	0.81533926
##	Other	1.22929361	-0.07572712
##			
##		Recycling centre	Specialist waste collection
##	I live alone	-0.64662658	0.14446302
##	I live with my parents/family	-0.88278652	0.37997248
##	I live in a house-/ flat-share	-0.52849820	-0.18257419
##	I live with my partner/children	1.15975932	-0.15428162
##	Other	-0.53851648	-0.34641016
##			
##		Landfill Deposit return scheme	
##	I live alone	-0.83066239	-0.95916630
##	I live with my parents/family	2.61534249	2.08641733
##	I live in a house-/ flat-share	1.27801930	-0.63245553
##	I live with my partner/children	-1.26392247	-0.08907453
##	Other	-0.17320508	-0.20000000
##			
##		Indefinite storage	Other I don't know
##	I live alone	1.71811684	0.30736306
##	I live with my parents/family	1.14299923	0.11379007
##	I live in a house-/ flat-share	0.39036003	0.35856858
##	I live with my partner/children	-1.76881126	-0.37681152
##	Other	-0.64807407	-0.26457513

chi.liv.filmpurchase.sim\$residuals

##		None	1-2	3-5
##	I live alone	3.15410935	0.38221323	1.12135368
##	I live with my parents/family	0.37997248	-0.82808431	-0.64782230
##	I live in a house-/ flat-share	-1.09544512	-0.13801311	-1.20245650
##	I live with my partner/children	-1.73665716	0.33941139	0.25247867
##	Other	-0.34641016	-0.91651514	-1.10453610

```
##
##              6-10      11-15      16+
## I live alone      -0.97880776 -1.99332498 -0.56027943
## I live with my parents/family  0.68300589 -1.33301325  1.78556607
## I live in a house-/ flat-share  0.50571950  2.58248539 -0.59628479
## I live with my partner/children -0.02223771  0.70932689 -0.51195667
## Other              0.81842716  0.97678174  1.93275854
##
##              I don't know
## I live alone      -0.45746624
## I live with my parents/family  1.99687665
## I live in a house-/ flat-share  -0.18257419
## I live with my partner/children -0.54987550
## Other              -0.34641016
```

```
chi.liv.filmreuse.sim$residuals
```

```
##
##              Never      Once      2-4 times
## I live alone      0.36918920 -0.70722160  0.16457626
## I live with my parents/family -0.38100896 -0.48646274  0.80604335
## I live in a house-/ flat-share -1.77028198  0.93718368  0.25819889
## I live with my partner/children 0.65386511  0.27112928 -0.51376548
## Other              0.41660452  0.18659924 -0.73484692
##
##              5-10 times  More often
## I live alone      -0.45746624  0.29611005
## I live with my parents/family  1.18842456  0.06327138
## I live in a house-/ flat-share  2.55603860  2.04124145
## I live with my partner/children -1.34106327 -1.05706691
## Other              -0.34641016 -0.38729833
```

```
chi.liv.filmdisp.sim$residuals
```

```
##
##              General waste bin Recycling bin
## I live alone      0.006404469  0.182608696
## I live with my parents/family -0.307516215 -0.213144364
## I live in a house-/ flat-share -1.068414449  1.252822899
## I live with my partner/children 0.579800878 -0.570058172
## Other              0.215003291  0.083405766
##
##              Recycling centre Specialist waste collection
## I live alone      0.045514956      -0.323477482
## I live with my parents/family  0.565463646      -0.874642784
## I live in a house-/ flat-share  0.997054486      -0.774596669
## I live with my partner/children -0.682179869      1.009814901
## Other              -0.412310563      -0.244948974
##
##              Landfill Deposit return scheme
## I live alone      -0.830662386      -0.678232998
## I live with my parents/family  0.998438323      -0.504975247
## I live in a house-/ flat-share -0.547722558      -0.447213595
```

##	I live with my partner/children	0.318453078	0.906017960
##	Other	-0.173205081	-0.141421356
##			
##		Indefinite storage	Other I don't know
##	I live alone	0.373196145	0.527779049 -0.323477482
##	I live with my parents/family	2.615342490	0.268681117 0.268681117
##	I live in a house-/ flat-share	-0.547722558	0.516397779 1.807392228
##	I live with my partner/children	-1.263922466	-0.668547815 -0.668547815
##	Other	-0.173205081	-0.244948974 -0.244948974

chi.liv.bagpurchase.sim\$residuals

##			
##		None	1-2 3-5
##	I live alone	1.04588865	-0.16871320 -2.19089254
##	I live with my parents/family	-1.39370263	-0.58006140 2.35642174
##	I live in a house-/ flat-share	-2.32527344	1.54961244 3.23102691
##	I live with my partner/children	1.03105259	-0.46889742 -1.02348248
##	Other	-0.21009029	1.40171509 -0.65574385
##			
##		6-10	11-15 16+
##	I live alone	-0.17699500	-0.67987942 0.85516335
##	I live with my parents/family	0.37103946	1.65788583 0.97034459
##	I live in a house-/ flat-share	0.07254763	0.50709255 -0.89442719
##	I live with my partner/children	-0.03694037	-0.53289196 -0.61047199
##	Other	-0.43588989	-0.37416574 -0.28284271
##			
##		I don't know	
##	I live alone	0.30736306	
##	I live with my parents/family	0.11379007	
##	I live in a house-/ flat-share	0.35856858	
##	I live with my partner/children	-0.37681152	
##	Other	-0.26457513	

chi.liv.bagreuse.sim\$residuals

##			
##		Never	Once 2-4 times
##	I live alone	-0.04868538	-0.35206898 -1.38164181
##	I live with my parents/family	-0.98209863	0.58685846 1.49340546
##	I live in a house-/ flat-share	-1.76068169	-0.19069252 0.22953904
##	I live with my partner/children	1.35185282	0.11775754 0.20995499
##	Other	-0.55677644	-0.66332496 -0.96436508
##			
##		5-10 times	More often
##	I live alone	-0.77258942	1.75947401
##	I live with my parents/family	-1.64855000	0.07591131
##	I live in a house-/ flat-share	3.40168026	-1.54040238
##	I live with my partner/children	-0.20883407	-0.67453387
##	Other	0.35856858	1.08423040

```
chi.liv.bagdisp.sim$residuals
```

```
##
##
##      General waste bin Recycling bin
## I live alone      -0.32955649    1.05217391
## I live with my parents/family      -0.99122867   -0.79710153
## I live in a house-/ flat-share      -0.34377583   -0.39562828
## I live with my partner/children      0.89987072   -0.14144301
## Other      -0.35958406    0.08340577
##
##
##      Recycling centre Specialist waste collection
## I live alone      -1.03382813      -1.35646600
## I live with my parents/family      1.19741735      2.95063968
## I live in a house-/ flat-share      0.05872202      -0.89442719
## I live with my partner/children      0.14186853      -0.12597041
## Other      -0.53851648      -0.28284271
##
##
##      Landfill Deposit return scheme
## I live alone      -0.67823300      -1.59059737
## I live with my parents/family      -0.50497525      0.50452940
## I live in a house-/ flat-share      -0.44721360      -0.09534626
## I live with my partner/children      0.90601796      0.88524744
## Other      -0.14142136      -0.33166248
##
##
##      Indefinite storage      Other I don't know
## I live alone      0.89489853    0.30869565   -0.04865336
## I live with my parents/family      0.74314292   -1.12849722    0.79582585
## I live in a house-/ flat-share      -0.79834165    3.09908822    1.15950181
## I live with my partner/children      -0.78179996   -0.92795184   -0.81880051
## Other      1.28424184   -0.47958315   -0.30000000
```

Simulated observed and expected values for 'living situation'

```
chi.liv.choice.sim$observed
```

```
##
##
##      Always As often as they can
## I live alone      10      44
## I live with my parents/family      7      22
## I live in a house-/ flat-share      7      21
## I live with my partner/children      22     119
## Other      0      2
##
##
##      If cheaper or preferred Rarely or never
## I live alone      28      10
## I live with my parents/family      21      1
## I live in a house-/ flat-share      9      3
## I live with my partner/children      57     15
## Other      1      1
```

`chi.liv.choice.sim$expected`

```
##
##
## Always As often as they can
## I live alone 10.580 47.84
## I live with my parents/family 5.865 26.52
## I live in a house-/ flat-share 4.600 20.80
## I live with my partner/children 24.495 110.76
## Other 0.460 2.08
##
## If cheaper or preferred Rarely or never
## I live alone 26.68 6.900
## I live with my parents/family 14.79 3.825
## I live in a house-/ flat-share 11.60 3.000
## I live with my partner/children 61.77 15.975
## Other 1.16 0.300
```

`chi.liv.barrier.sim$observed`

```
##
## Council collection Unclear information
## I live alone 26 10
## I live with my parents/family 10 12
## I live in a house-/ flat-share 11 7
## I live with my partner/children 67 32
## Other 1 1
##
## Difficult transport No local facilities
## I live alone 10 7
## I live with my parents/family 5 4
## I live in a house-/ flat-share 2 5
## I live with my partner/children 14 18
## Other 0 1
##
## No support Ends up in landfills Forgetting
## I live alone 5 2 7
## I live with my parents/family 4 3 5
## I live in a house-/ flat-share 1 5 2
## I live with my partner/children 8 23 10
## Other 0 0 1
##
## Recycling a hassle Household disagrees
## I live alone 4 1
## I live with my parents/family 3 1
## I live in a house-/ flat-share 1 1
## I live with my partner/children 2 2
## Other 0 0
##
## Recycling not important Other
## I live alone 2 0
## I live with my parents/family 1 0
## I live in a house-/ flat-share 0 1
## I live with my partner/children 2 3
```

##	Other	0	0
##			
##	Already doing everything		
##	I live alone	18	
##	I live with my parents/family	3	
##	I live in a house-/ flat-share	4	
##	I live with my partner/children	32	
##	Other	0	

chi.liv.barrier.sim\$expected

##				
##	Council collection Unclear information			
##	I live alone	26.4500	14.260	
##	I live with my parents/family	14.6625	7.905	
##	I live in a house-/ flat-share	11.5000	6.200	
##	I live with my partner/children	61.2375	33.015	
##	Other	1.1500	0.620	
##				
##	Difficult transport No local facilities			
##	I live alone	7.1300	8.0500	
##	I live with my parents/family	3.9525	4.4625	
##	I live in a house-/ flat-share	3.1000	3.5000	
##	I live with my partner/children	16.5075	18.6375	
##	Other	0.3100	0.3500	
##				
##	No support Ends up in landfills Forgetting			
##	I live alone	4.140	7.5900	5.7500
##	I live with my parents/family	2.295	4.2075	3.1875
##	I live in a house-/ flat-share	1.800	3.3000	2.5000
##	I live with my partner/children	9.585	17.5725	13.3125
##	Other	0.180	0.3300	0.2500
##				
##	Recycling a hassle Household disagrees			
##	I live alone	2.300	1.1500	
##	I live with my parents/family	1.275	0.6375	
##	I live in a house-/ flat-share	1.000	0.5000	
##	I live with my partner/children	5.325	2.6625	
##	Other	0.100	0.0500	
##				
##	Recycling not important Other			
##	I live alone	1.1500	0.92	
##	I live with my parents/family	0.6375	0.51	
##	I live in a house-/ flat-share	0.5000	0.40	
##	I live with my partner/children	2.6625	2.13	
##	Other	0.0500	0.04	
##				
##	Already doing everything			
##	I live alone	13.1100		
##	I live with my parents/family	7.2675		
##	I live in a house-/ flat-share	5.7000		
##	I live with my partner/children	30.3525		
##	Other	0.5700		

```
chi.liv.barrier2.sim$observed
```

```
##
## Limited alternatives No SUP-free alternatives
## I live alone 28 15
## I live with my parents/family 7 11
## I live in a house-/ flat-share 6 11
## I live with my partner/children 49 47
## Other 0 1
##
## Alternatives expensive Limited functioning
## I live alone 15 9
## I live with my parents/family 17 5
## I live in a house-/ flat-share 7 5
## I live with my partner/children 45 20
## Other 1 0
##
## Forgetting reusables Reducing not important
## I live alone 10 1
## I live with my parents/family 6 4
## I live in a house-/ flat-share 5 3
## I live with my partner/children 19 4
## Other 0 1
##
## Other No barriers
## I live alone 1 13
## I live with my parents/family 0 1
## I live in a house-/ flat-share 1 2
## I live with my partner/children 6 23
## Other 0 1
```

```
chi.liv.barrier2.sim$expected
```

```
##
## Limited alternatives No SUP-free alternatives
## I live alone 20.700 19.5500
## I live with my parents/family 11.475 10.8375
## I live in a house-/ flat-share 9.000 8.5000
## I live with my partner/children 47.925 45.2625
## Other 0.900 0.8500
##
## Alternatives expensive Limited functioning
## I live alone 19.5500 8.9700
## I live with my parents/family 10.8375 4.9725
## I live in a house-/ flat-share 8.5000 3.9000
## I live with my partner/children 45.2625 20.7675
## Other 0.8500 0.3900
##
## Forgetting reusables Reducing not important
## I live alone 9.2 2.9900
## I live with my parents/family 5.1 1.6575
## I live in a house-/ flat-share 4.0 1.3000
## I live with my partner/children 21.3 6.9225
```

##	Other	0.4	0.1300
##			
##		Other No barriers	
##	I live alone	1.84	9.2
##	I live with my parents/family	1.02	5.1
##	I live in a house-/ flat-share	0.80	4.0
##	I live with my partner/children	4.26	21.3
##	Other	0.08	0.4

chi.liv.mainconsid.sim\$observed

##		Value for money	Price	Quality	Deals/discounts
##	I live alone	26	16	27	5
##	I live with my parents/family	15	18	6	3
##	I live in a house-/ flat-share	17	9	4	4
##	I live with my partner/children	58	53	51	14
##	Other	3	1	0	0
##		Use-by-dates/longevity	Convenience		
##	I live alone		3		4
##	I live with my parents/family		0		1
##	I live in a house-/ flat-share		2		0
##	I live with my partner/children		9		5
##	Other		0		0
##		Ease of recycling packaging	Sustainability		
##	I live alone		5		2
##	I live with my parents/family		2		3
##	I live in a house-/ flat-share		3		1
##	I live with my partner/children		12		7
##	Other		0		0
##		Brand	Ethics	Other	
##	I live alone	0	2	2	
##	I live with my parents/family	2	1	0	
##	I live in a house-/ flat-share	0	0	0	
##	I live with my partner/children	2	2	0	
##	Other	0	0	0	

chi.liv.mainconsid.sim\$expected

##		Value for money	Price	Quality
##	I live alone	27.3700	22.3100	20.24
##	I live with my parents/family	15.1725	12.3675	11.22
##	I live in a house-/ flat-share	11.9000	9.7000	8.80
##	I live with my partner/children	63.3675	51.6525	46.86
##	Other	1.1900	0.9700	0.88
##		Deals/discounts	Use-by-dates/longevity	
##	I live alone	5.980		3.220
##	I live with my parents/family	3.315		1.785

##	I live in a house-/ flat-share	2.600	1.400
##	I live with my partner/children	13.845	7.455
##	Other	0.260	0.140
##			
##		Convenience	Ease of recycling packaging
##	I live alone	2.300	5.060
##	I live with my parents/family	1.275	2.805
##	I live in a house-/ flat-share	1.000	2.200
##	I live with my partner/children	5.325	11.715
##	Other	0.100	0.220
##			
##		Sustainability	Brand Ethics Other
##	I live alone	2.9900	0.92 1.1500 0.460
##	I live with my parents/family	1.6575	0.51 0.6375 0.255
##	I live in a house-/ flat-share	1.3000	0.40 0.5000 0.200
##	I live with my partner/children	6.9225	2.13 2.6625 1.065
##	Other	0.1300	0.04 0.0500 0.020

```
chi.liv.litter.sim$observed
```

##			
##		Strongly agree	Agree
##	I live alone	31	43
##	I live with my parents/family	23	18
##	I live in a house-/ flat-share	15	14
##	I live with my partner/children	104	85
##	Other	0	2
##			
##		Neither agree nor disagree	Disagree
##	I live alone	14	3
##	I live with my parents/family	8	1
##	I live in a house-/ flat-share	7	3
##	I live with my partner/children	22	1
##	Other	2	0
##			
##		Strongly disagree	
##	I live alone	1	
##	I live with my parents/family	1	
##	I live in a house-/ flat-share	1	
##	I live with my partner/children	1	
##	Other	0	

```
chi.liv.litter.sim$expected
```

##			
##		Strongly agree	Agree
##	I live alone	39.7900	37.260
##	I live with my parents/family	22.0575	20.655
##	I live in a house-/ flat-share	17.3000	16.200
##	I live with my partner/children	92.1225	86.265
##	Other	1.7300	1.620
##			
##		Neither agree nor disagree	Disagree

```
## I live alone 12.1900 1.84
## I live with my parents/family 6.7575 1.02
## I live in a house-/ flat-share 5.3000 0.80
## I live with my partner/children 28.2225 4.26
## Other 0.5300 0.08
##
## Strongly disagree
## I live alone 0.92
## I live with my parents/family 0.51
## I live in a house-/ flat-share 0.40
## I live with my partner/children 2.13
## Other 0.04
```

```
chi.liv.attitude.sim$observed
```

```
##
## 1 (Not concerned) 2 3 4 5 6
## I live alone 6 4 9 16 25 12
## I live with my parents/family 8 2 5 14 13 6
## I live in a house-/ flat-share 5 2 7 6 6 4
## I live with my partner/children 7 12 19 36 69 34
## Other 1 0 1 1 1 0
##
## 7 (Very concerned
## I live alone 20
## I live with my parents/family 3
## I live in a house-/ flat-share 10
## I live with my partner/children 36
## Other 0
```

```
chi.liv.attitude.sim$expected
```

```
##
## 1 (Not concerned) 2 3 4
## I live alone 6.2100 4.60 9.4300 16.7900
## I live with my parents/family 3.4425 2.55 5.2275 9.3075
## I live in a house-/ flat-share 2.7000 2.00 4.1000 7.3000
## I live with my partner/children 14.3775 10.65 21.8325 38.8725
## Other 0.2700 0.20 0.4100 0.7300
##
## 5 6 7 (Very concerned
## I live alone 26.220 12.88 15.8700
## I live with my parents/family 14.535 7.14 8.7975
## I live in a house-/ flat-share 11.400 5.60 6.9000
## I live with my partner/children 60.705 29.82 36.7425
## Other 1.140 0.56 0.6900
```

```
chi.liv.ocean.sim$observed
```

```
##
## Always Most of the time Sometimes Rarely
## I live alone 2 18 50 19
```

##	I live with my parents/family	5	15	26	5
##	I live in a house-/ flat-share	2	14	20	0
##	I live with my partner/children	10	56	103	35
##	Other	0	1	1	1
##					
##		Never			
##	I live alone	3			
##	I live with my parents/family	0			
##	I live in a house-/ flat-share	4			
##	I live with my partner/children	9			
##	Other	1			

```
chi.liv.ocean.sim$expected
```

##		Always	Most of the time	Sometimes	Rarely
##	I live alone	4.3700	23.92	46.0	13.80
##	I live with my parents/family	2.4225	13.26	25.5	7.65
##	I live in a house-/ flat-share	1.9000	10.40	20.0	6.00
##	I live with my partner/children	10.1175	55.38	106.5	31.95
##	Other	0.1900	1.04	2.0	0.60
##					
##		Never			
##	I live alone	3.9100			
##	I live with my parents/family	2.1675			
##	I live in a house-/ flat-share	1.7000			
##	I live with my partner/children	9.0525			
##	Other	0.1700			

```
chi.liv.actions.sim$observed
```

##		Yes, definitely	Yes, probably
##	I live alone	39	38
##	I live with my parents/family	13	27
##	I live in a house-/ flat-share	13	20
##	I live with my partner/children	77	102
##	Other	0	4
##			
##		No, probably not	No, definitely not
##	I live alone	12	1
##	I live with my parents/family	6	1
##	I live in a house-/ flat-share	5	1
##	I live with my partner/children	20	8
##	Other	0	0
##			
##		I don't know	
##	I live alone	2	
##	I live with my parents/family	4	
##	I live in a house-/ flat-share	1	
##	I live with my partner/children	6	
##	Other	0	

```
chi.liv.actions.sim$expected
```

```
##
##                               Yes, definitely Yes, probably
## I live alone                 32.660         43.9300
## I live with my parents/family 18.105         24.3525
## I live in a house-/ flat-share 14.200         19.1000
## I live with my partner/children 75.615        101.7075
## Other                        1.420          1.9100
##
##                               No, probably not No, definitely not
## I live alone                 9.8900         2.5300
## I live with my parents/family 5.4825         1.4025
## I live in a house-/ flat-share 4.3000         1.1000
## I live with my partner/children 22.8975        5.8575
## Other                        0.4300         0.1100
##
##                               I don't know
## I live alone                 2.9900
## I live with my parents/family 1.6575
## I live in a house-/ flat-share 1.3000
## I live with my partner/children 6.9225
## Other                        0.1300
```

```
chi.liv.bottpurchase.sim$observed
```

```
##
##                               None 1-2 3-5 6-10 11-15 16+ I don't know
## I live alone                 5  43  27  11    1  3          2
## I live with my parents/family 1  15  15   9    4  5          2
## I live in a house-/ flat-share 0  14  16   6    2  1          1
## I live with my partner/children 6  65  74  46   12  5          5
## Other                        0   0   2   2    0  0          0
```

```
chi.liv.bottpurchase.sim$expected
```

```
##
##                               None    1-2    3-5    6-10    11-15    16+
## I live alone                 2.76 31.5100 30.820 17.020  4.3700 3.220
## I live with my parents/family 1.53 17.4675 17.085  9.435  2.4225 1.785
## I live in a house-/ flat-share 1.20 13.7000 13.400  7.400  1.9000 1.400
## I live with my partner/children 6.39 72.9525 71.355 39.405 10.1175 7.455
## Other                        0.12  1.3700  1.340  0.740  0.1900 0.140
##
##                               I don't know
## I live alone                 2.300
## I live with my parents/family 1.275
## I live in a house-/ flat-share 1.000
## I live with my partner/children 5.325
## Other                        0.100
```

```
chi.liv.bottreuse.sim$observed
```

```
##
##               Never Once 2-4 times 5-10 times More often
## I live alone      17  13      27      11      24
## I live with my parents/family      8   9      19      4      11
## I live in a house-/ flat-share      4   6      11      11      8
## I live with my partner/children    40  38      71      30      34
## Other              2   0       1       1       0
```

```
chi.liv.bottreuse.sim$expected
```

```
##
##               Never Once 2-4 times 5-10 times
## I live alone    16.3300 15.180   29.6700   13.1100
## I live with my parents/family    9.0525 8.415   16.4475    7.2675
## I live in a house-/ flat-share    7.1000 6.600   12.9000    5.7000
## I live with my partner/children  37.8075 35.145   68.6925   30.3525
## Other           0.7100 0.660    1.2900    0.5700
##
##               More often
## I live alone      17.7100
## I live with my parents/family    9.8175
## I live in a house-/ flat-share    7.7000
## I live with my partner/children  41.0025
## Other             0.7700
```

```
chi.liv.bottdisp.sim$observed
```

```
##
##               General waste bin Recycling bin
## I live alone                7      75
## I live with my parents/family    9      32
## I live in a house-/ flat-share    3      32
## I live with my partner/children    7     186
## Other                         1       3
##
##               Recycling centre Specialist waste collection
## I live alone                3      0
## I live with my parents/family    2      2
## I live in a house-/ flat-share    1      1
## I live with my partner/children    4      4
## Other                         0      0
##
##               Landfill Deposit return scheme
## I live alone                1      1
## I live with my parents/family    1      1
## I live in a house-/ flat-share    0      0
## I live with my partner/children    3      2
## Other                         0      0
##
##               Indefinite storage Other I don't know
```

##	I live alone	4	1	0
##	I live with my parents/family	4	0	0
##	I live in a house-/ flat-share	1	1	1
##	I live with my partner/children	7	0	0
##	Other	0	0	0

```
chi.liv.bottdisp.sim$expected
```

##		General waste bin	Recycling bin
##	I live alone	6.2100	75.44
##	I live with my parents/family	3.4425	41.82
##	I live in a house-/ flat-share	2.7000	32.80
##	I live with my partner/children	14.3775	174.66
##	Other	0.2700	3.28

##		Recycling centre	Specialist waste collection
##	I live alone	2.300	1.6100
##	I live with my parents/family	1.275	0.8925
##	I live in a house-/ flat-share	1.000	0.7000
##	I live with my partner/children	5.325	3.7275
##	Other	0.100	0.0700

##		Landfill Deposit return scheme
##	I live alone	1.1500 0.92
##	I live with my parents/family	0.6375 0.51
##	I live in a house-/ flat-share	0.5000 0.40
##	I live with my partner/children	2.6625 2.13
##	Other	0.0500 0.04

##		Indefinite storage	Other	I don't know
##	I live alone	3.68	0.460	0.2300
##	I live with my parents/family	2.04	0.255	0.1275
##	I live in a house-/ flat-share	1.60	0.200	0.1000
##	I live with my partner/children	8.52	1.065	0.5325
##	Other	0.16	0.020	0.0100

```
chi.liv.tubspurchase.sim$observed
```

##		None	1-2	3-5	6-10	11-15	16+	I don't know
##	I live alone	4	33	35	12	2	3	3
##	I live with my parents/family	1	8	22	11	5	2	2
##	I live in a house-/ flat-share	0	15	9	9	5	1	1
##	I live with my partner/children	7	51	77	52	15	7	4
##	Other	0	1	0	1	2	0	0

```
chi.liv.tubspurchase.sim$expected
```

##		None	1-2	3-5	6-10	11-15	16+
##	I live alone	2.76	24.84	32.8900	19.5500	6.6700	2.9900

```
## I live with my parents/family 1.53 13.77 18.2325 10.8375 3.6975 1.6575
## I live in a house-/ flat-share 1.20 10.80 14.3000 8.5000 2.9000 1.3000
## I live with my partner/children 6.39 57.51 76.1475 45.2625 15.4425 6.9225
## Other 0.12 1.08 1.4300 0.8500 0.2900 0.1300
##
## I don't know
## I live alone 2.300
## I live with my parents/family 1.275
## I live in a house-/ flat-share 1.000
## I live with my partner/children 5.325
## Other 0.100
```

```
chi.liv.tubreuse.sim$observed
```

```
##
## Never Once 2-4 times 5-10 times More often
## I live alone 19 9 17 10 37
## I live with my parents/family 6 5 10 8 22
## I live in a house-/ flat-share 4 3 12 7 14
## I live with my partner/children 30 24 57 32 70
## Other 2 0 1 1 0
```

```
chi.liv.tubreuse.sim$expected
```

```
##
## Never Once 2-4 times 5-10 times
## I live alone 14.0300 9.4300 22.3100 13.340
## I live with my parents/family 7.7775 5.2275 12.3675 7.395
## I live in a house-/ flat-share 6.1000 4.1000 9.7000 5.800
## I live with my partner/children 32.4825 21.8325 51.6525 30.885
## Other 0.6100 0.4100 0.9700 0.580
##
## More often
## I live alone 32.8900
## I live with my parents/family 18.2325
## I live in a house-/ flat-share 14.3000
## I live with my partner/children 76.1475
## Other 1.4300
```

```
chi.liv.tubdisp.sim$observed
```

```
##
## General waste bin Recycling bin
## I live alone 19 46
## I live with my parents/family 10 21
## I live in a house-/ flat-share 8 21
## I live with my partner/children 47 121
## Other 2 2
##
## Recycling centre Specialist waste collection
## I live alone 5 3
## I live with my parents/family 2 2
```

##	I live in a house-/ flat-share	2	1
##	I live with my partner/children	20	6
##	Other	0	0
##			
##		Landfill Deposit return scheme	
##	I live alone	0	0
##	I live with my parents/family	2	2
##	I live in a house-/ flat-share	1	0
##	I live with my partner/children	0	2
##	Other	0	0
##			
##		Indefinite storage	Other I don't know
##	I live alone	15	2 2
##	I live with my parents/family	8	1 3
##	I live in a house-/ flat-share	5	1 1
##	I live with my partner/children	14	3 0
##	Other	0	0 0

chi.liv.tubdisp.sim\$expected

##			
##		General waste bin	Recycling bin
##	I live alone	19.780	48.5300
##	I live with my parents/family	10.965	26.9025
##	I live in a house-/ flat-share	8.600	21.1000
##	I live with my partner/children	45.795	112.3575
##	Other	0.860	2.1100
##			
##		Recycling centre	Specialist waste collection
##	I live alone	6.6700	2.76
##	I live with my parents/family	3.6975	1.53
##	I live in a house-/ flat-share	2.9000	1.20
##	I live with my partner/children	15.4425	6.39
##	Other	0.2900	0.12
##			
##		Landfill Deposit return scheme	
##	I live alone	0.6900	0.92
##	I live with my parents/family	0.3825	0.51
##	I live in a house-/ flat-share	0.3000	0.40
##	I live with my partner/children	1.5975	2.13
##	Other	0.0300	0.04
##			
##		Indefinite storage	Other I don't know
##	I live alone	9.660	1.6100 1.380
##	I live with my parents/family	5.355	0.8925 0.765
##	I live in a house-/ flat-share	4.200	0.7000 0.600
##	I live with my partner/children	22.365	3.7275 3.195
##	Other	0.420	0.0700 0.060

chi.liv.filmpurchase.sim\$observed

##	
##	None 1-2 3-5 6-10 11-15 16+ I don't know

##	I live alone	8	21	34	21	3	3	2
##	I live with my parents/family	2	8	13	17	2	5	4
##	I live in a house-/ flat-share	0	8	8	13	9	1	1
##	I live with my partner/children	2	47	67	60	24	8	5
##	Other	0	0	0	2	1	1	0

```
chi.liv.filmpurchase.sim$expected
```

##		None	1-2	3-5	6-10	11-15	16+
##	I live alone	2.76	19.32	28.060	25.9900	8.9700	4.140
##	I live with my parents/family	1.53	10.71	15.555	14.4075	4.9725	2.295
##	I live in a house-/ flat-share	1.20	8.40	12.200	11.3000	3.9000	1.800
##	I live with my partner/children	6.39	44.73	64.965	60.1725	20.7675	9.585
##	Other	0.12	0.84	1.220	1.1300	0.3900	0.180
##		I don't know					
##	I live alone		2.76				
##	I live with my parents/family		1.53				
##	I live in a house-/ flat-share		1.20				
##	I live with my partner/children		6.39				
##	Other		0.12				

```
chi.liv.filmreuse.sim$observed
```

##		Never	Once	2-4 times	5-10 times	More often
##	I live alone	57	16	13	2	4
##	I live with my parents/family	28	9	9	3	2
##	I live in a house-/ flat-share	15	11	6	4	4
##	I live with my partner/children	133	46	26	3	5
##	Other	3	1	0	0	0

```
chi.liv.filmreuse.sim$expected
```

##		Never	Once	2-4 times	5-10 times
##	I live alone	54.28	19.0900	12.420	2.76
##	I live with my parents/family	30.09	10.5825	6.885	1.53
##	I live in a house-/ flat-share	23.60	8.3000	5.400	1.20
##	I live with my partner/children	125.67	44.1975	28.755	6.39
##	Other	2.36	0.8300	0.540	0.12
##		More often			
##	I live alone		3.4500		
##	I live with my parents/family		1.9125		
##	I live in a house-/ flat-share		1.5000		
##	I live with my partner/children		7.9875		
##	Other		0.1500		

```
chi.liv.filmdisp.sim$observed
```

```
##
##                               General waste bin Recycling bin
## I live alone                  61                22
## I live with my parents/family 32                11
## I live in a house-/ flat-share 21                13
## I live with my partner/children 148               45
## Other                        3                 1
##
##                               Recycling centre Specialist waste collection
## I live alone                  4                 1
## I live with my parents/family 3                 0
## I live in a house-/ flat-share 3                 0
## I live with my partner/children 7                5
## Other                        0                 0
##
##                               Landfill Deposit return scheme
## I live alone                  0                 0
## I live with my parents/family 1                 0
## I live in a house-/ flat-share 0                 0
## I live with my partner/children 2                2
## Other                        0                 0
##
##                               Indefinite storage Other I don't know
## I live alone                  1                 2                 1
## I live with my parents/family 2                 1                 1
## I live in a house-/ flat-share 0                 1                 2
## I live with my partner/children 0                 2                 2
## Other                        0                 0                 0
```

```
chi.liv.filmdisp.sim$expected
```

```
##
##                               General waste bin Recycling bin
## I live alone                  60.9500           21.16
## I live with my parents/family 33.7875           11.73
## I live in a house-/ flat-share 26.5000            9.20
## I live with my partner/children 141.1125          48.99
## Other                        2.6500            0.92
##
##                               Recycling centre Specialist waste collection
## I live alone                  3.9100             1.380
## I live with my parents/family 2.1675             0.765
## I live in a house-/ flat-share 1.7000             0.600
## I live with my partner/children 9.0525            3.195
## Other                        0.1700             0.060
##
##                               Landfill Deposit return scheme
## I live alone                  0.6900             0.460
## I live with my parents/family 0.3825             0.255
## I live in a house-/ flat-share 0.3000             0.200
```

##	I live with my partner/children	1.5975		1.065
##	Other	0.0300		0.020
##				
##		Indefinite storage	Other	I don't know
##	I live alone		0.6900	1.380
##	I live with my parents/family		0.3825	0.765
##	I live in a house-/ flat-share		0.3000	0.600
##	I live with my partner/children		1.5975	3.195
##	Other		0.0300	0.060

```
chi.liv.bagpurchase.sim$observed
```

##								
##		None	1-2	3-5	6-10	11-15	16+	I don't know
##	I live alone	61	17	3	4	2	3	2
##	I live with my parents/family	22	8	11	3	4	2	1
##	I live in a house-/ flat-share	12	12	11	2	2	0	1
##	I live with my partner/children	135	38	18	10	6	3	3
##	Other	2	2	0	0	0	0	0

```
chi.liv.bagpurchase.sim$expected
```

##							
##		None	1-2	3-5	6-10	11-15	16+
##	I live alone	53.36	17.7100	9.8900	4.3700	3.220	1.84
##	I live with my parents/family	29.58	9.8175	5.4825	2.4225	1.785	1.02
##	I live in a house-/ flat-share	23.20	7.7000	4.3000	1.9000	1.400	0.80
##	I live with my partner/children	123.54	41.0025	22.8975	10.1175	7.455	4.26
##	Other	2.32	0.7700	0.4300	0.1900	0.140	0.08
##							
##		I don't know					
##	I live alone		1.6100				
##	I live with my parents/family		0.8925				
##	I live in a house-/ flat-share		0.7000				
##	I live with my partner/children		3.7275				
##	Other		0.0700				

```
chi.liv.bagreuse.sim$observed
```

##						
##		Never	Once	2-4 times	5-10 times	More often
##	I live alone	7	9	15	13	48
##	I live with my parents/family	2	7	17	4	21
##	I live in a house-/ flat-share	0	4	10	16	10
##	I live with my partner/children	22	24	51	36	80
##	Other	0	0	0	1	3

```
chi.liv.bagreuse.sim$expected
```

##						
##		Never	Once	2-4 times	5-10 times	More often

##	I live alone	7.1300	10.12	21.3900	16.100	37.260
##	I live with my parents/family	3.9525	5.61	11.8575	8.925	20.655
##	I live in a house-/ flat-share	3.1000	4.40	9.3000	7.000	16.200
##	I live with my partner/children	16.5075	23.43	49.5225	37.275	86.265
##	Other	0.3100	0.44	0.9300	0.700	1.620

chi.liv.bagdisp.sim\$observed

##		General waste bin	Recycling bin
##	I live alone	31	26
##	I live with my parents/family	14	9
##	I live in a house-/ flat-share	13	8
##	I live with my partner/children	84	48
##	Other	1	1

##		Recycling centre	Specialist waste collection
##	I live alone	4	0
##	I live with my parents/family	6	4
##	I live in a house-/ flat-share	3	0
##	I live with my partner/children	16	4
##	Other	0	0

##		Landfill	Deposit return scheme
##	I live alone	0	0
##	I live with my parents/family	0	2
##	I live in a house-/ flat-share	0	1
##	I live with my partner/children	2	8
##	Other	0	0

##		Indefinite storage	Other	I don't know
##	I live alone	23	6	2
##	I live with my parents/family	13	1	2
##	I live in a house-/ flat-share	6	7	2
##	I live with my partner/children	39	9	3
##	Other	2	0	0

chi.liv.bagdisp.sim\$expected

##		General waste bin	Recycling bin
##	I live alone	32.8900	21.16
##	I live with my parents/family	18.2325	11.73
##	I live in a house-/ flat-share	14.3000	9.20
##	I live with my partner/children	76.1475	48.99
##	Other	1.4300	0.92

##		Recycling centre	Specialist waste collection
##	I live alone	6.6700	1.84
##	I live with my parents/family	3.6975	1.02
##	I live in a house-/ flat-share	2.9000	0.80
##	I live with my partner/children	15.4425	4.26
##	Other	0.2900	0.08

```
##
##
##      Landfill Deposit return scheme
##      I live alone          0.460          2.5300
##      I live with my parents/family  0.255          1.4025
##      I live in a house-/ flat-share  0.200          1.1000
##      I live with my partner/children 1.065          5.8575
##      Other                  0.020          0.1100
##
##
##      Indefinite storage   Other I don't know
##      I live alone          19.0900  5.2900    2.0700
##      I live with my parents/family 10.5825  2.9325    1.1475
##      I live in a house-/ flat-share  8.3000  2.3000    0.9000
##      I live with my partner/children 44.1975 12.2475    4.7925
##      Other                  0.8300  0.2300    0.0900
```

Postcode

```
chi.post.choice <- chisq.test(post.choice)
```

```
## Warning in chisq.test(post.choice): Chi-squared approximation may be incorrect
```

```
chi.post.barrier <- chisq.test(post.barrier)
```

```
## Warning in chisq.test(post.barrier): Chi-squared approximation may be incorrect
```

```
chi.post.barrier2 <- chisq.test(post.barrier2)
```

```
## Warning in chisq.test(post.barrier2): Chi-squared approximation may be incorrect
```

```
chi.post.mainconsid <- chisq.test(post.mainconsid)
```

```
## Warning in chisq.test(post.mainconsid): Chi-squared approximation may be
## incorrect
```

```
chi.post.litter <- chisq.test(post.litter)
```

```
## Warning in chisq.test(post.litter): Chi-squared approximation may be incorrect
```

```
chi.post.attitude <- chisq.test(post.attitude)
```

```
## Warning in chisq.test(post.attitude): Chi-squared approximation may be incorrect
```

```
chi.post.ocean <- chisq.test(post.ocean)
```

```
## Warning in chisq.test(post.ocean): Chi-squared approximation may be incorrect
```

```
chi.post.actions <- chisq.test(post.actions)
```

```
## Warning in chisq.test(post.actions): Chi-squared approximation may be incorrect
```

```
chi.post.zerow <- chisq.test(post.zerow)
```

```
## Warning in chisq.test(post.zerow): Chi-squared approximation may be incorrect
```

```
chi.post.attplast <- chisq.test(post.attplast)
```

```
## Warning in chisq.test(post.attplast): Chi-squared approximation may be incorrect
```

```
chi.post.bottpurchase <- chisq.test(post.bottpurchase)
```

```
## Warning in chisq.test(post.bottpurchase): Chi-squared approximation may be  
## incorrect
```

```
chi.post.bottdisp <- chisq.test(post.bottdisp)
```

```
## Warning in chisq.test(post.bottdisp): Chi-squared approximation may be incorrect
```

```
chi.post.tubspurchase <- chisq.test(post.tubspurchase)
```

```
## Warning in chisq.test(post.tubspurchase): Chi-squared approximation may be  
## incorrect
```

```
chi.post.tubdisp <- chisq.test(post.tubdisp)
```

```
## Warning in chisq.test(post.tubdisp): Chi-squared approximation may be incorrect
```

```
chi.post.filmpurchase <- chisq.test(post.filmpurchase)
```

```
## Warning in chisq.test(post.filmpurchase): Chi-squared approximation may be  
## incorrect
```

```
chi.post.filmreuse <- chisq.test(post.filmreuse)
```

```
## Warning in chisq.test(post.filmreuse): Chi-squared approximation may be  
## incorrect
```

```
chi.post.filmdisp <- chisq.test(post.filmdisp)
```

```
## Warning in chisq.test(post.filmdisp): Chi-squared approximation may be incorrect
```

```
chi.post.bagpurchase <- chisq.test(post.bagpurchase)
```

```
## Warning in chisq.test(post.bagpurchase): Chi-squared approximation may be  
## incorrect
```

```
chi.post.bagreuse <- chisq.test(post.bagreuse)
```

```
## Warning in chisq.test(post.bagreuse): Chi-squared approximation may be incorrect
```

```
chi.post.bagdisp <- chisq.test(post.bagdisp)
```

```
## Warning in chisq.test(post.bagdisp): Chi-squared approximation may be incorrect
```

```
chi.post.choice.sim <- chisq.test(post.choice, simulate.p.value = TRUE)  
chi.post.choice.sim
```

```
##  
## Pearson's Chi-squared test with simulated p-value (based on 2000  
## replicates)  
##  
## data: post.choice  
## X-squared = 19.059, df = NA, p-value = 0.1979
```

```
chi.post.barrier.sim <- chisq.test(post.barrier, simulate.p.value = TRUE)  
chi.post.barrier.sim
```

```
##  
## Pearson's Chi-squared test with simulated p-value (based on 2000  
## replicates)  
##  
## data: post.barrier  
## X-squared = 47.618, df = NA, p-value = 0.7611
```

```
chi.post.barrier2.sim <- chisq.test(post.barrier2, simulate.p.value = TRUE)  
chi.post.barrier2.sim
```

```
##  
## Pearson's Chi-squared test with simulated p-value (based on 2000  
## replicates)  
##  
## data: post.barrier2  
## X-squared = 37.022, df = NA, p-value = 0.3748
```

```
chi.post.mainconsid.sim <- chisq.test(post.mainconsid, simulate.p.value = TRUE)  
chi.post.mainconsid.sim
```

```
##  
## Pearson's Chi-squared test with simulated p-value (based on 2000  
## replicates)  
##  
## data: post.mainconsid  
## X-squared = 46.348, df = NA, p-value = 0.6167
```

```
chi.post.litter.sim <- chisq.test(post.litter, simulate.p.value = TRUE)
chi.post.litter.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data: post.litter
## X-squared = 23.412, df = NA, p-value = 0.2674
```

```
chi.post.attitude.sim <- chisq.test(post.attitude, simulate.p.value = TRUE)
chi.post.attitude.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data: post.attitude
## X-squared = 28.904, df = NA, p-value = 0.5287
```

```
chi.post.ocean.sim <- chisq.test(post.ocean, simulate.p.value = TRUE)
chi.post.ocean.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data: post.ocean
## X-squared = 10.852, df = NA, p-value = 0.963
```

```
chi.post.actions.sim <- chisq.test(post.actions, simulate.p.value = TRUE)
chi.post.actions.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data: post.actions
## X-squared = 25.422, df = NA, p-value = 0.1744
```

```
chi.post.attplast.sim <- chisq.test(post.attplast, simulate.p.value = TRUE)
chi.post.attplast.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data: post.attplast
## X-squared = 12.939, df = NA, p-value = 0.6122
```

```
chi.post.zerow.sim <- chisq.test(post.zerow, simulate.p.value = TRUE)
chi.post.zerow.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data: post.zerow
## X-squared = 47.264, df = NA, p-value = 0.003498
```

```
chi.post.bottpurchase.sim <- chisq.test(post.bottpurchase, simulate.p.value = TRUE)
chi.post.bottpurchase.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data: post.bottpurchase
## X-squared = 53.875, df = NA, p-value = 0.004498
```

```
chi.post.bottdisp.sim <- chisq.test(post.bottdisp, simulate.p.value = TRUE)
chi.post.bottdisp.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data: post.bottdisp
## X-squared = 34.676, df = NA, p-value = 0.7546
```

```
chi.post.tubspurchase.sim <- chisq.test(post.tubspurchase, simulate.p.value = TRUE)
chi.post.tubspurchase.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data: post.tubspurchase
## X-squared = 33.853, df = NA, p-value = 0.2959
```

```
chi.post.tubdisp.sim <- chisq.test(post.tubdisp, simulate.p.value = TRUE)
chi.post.tubdisp.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data: post.tubdisp
## X-squared = 40.575, df = NA, p-value = 0.4338
```

```
chi.post.filmpurchase.sim <- chisq.test(post.filmpurchase, simulate.p.value = TRUE)
chi.post.filmpurchase.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data: post.filmpurchase
## X-squared = 44.685, df = NA, p-value = 0.03948
```

```
chi.post.filmreuse.sim <- chisq.test(post.filmreuse, simulate.p.value = TRUE)
chi.post.filmreuse.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data: post.filmreuse
## X-squared = 23.012, df = NA, p-value = 0.2864
```

```
chi.post.filmdisp.sim <- chisq.test(post.filmdisp, simulate.p.value = TRUE)
chi.post.filmdisp.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data: post.filmdisp
## X-squared = 34.581, df = NA, p-value = 0.7551
```

```
chi.post.bagpurchase.sim <- chisq.test(post.bagpurchase, simulate.p.value = TRUE)
chi.post.bagpurchase.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data: post.bagpurchase
## X-squared = 36.374, df = NA, p-value = 0.1824
```

```
chi.post.bagreuse.sim <- chisq.test(post.bagreuse, simulate.p.value = TRUE)
chi.post.bagreuse.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data: post.bagreuse
## X-squared = 30.598, df = NA, p-value = 0.05347
```

```
chi.post.bagdisp.sim <- chisq.test(post.bagdisp, simulate.p.value = TRUE)
chi.post.bagdisp.sim
```

```
##
## Pearson's Chi-squared test with simulated p-value (based on 2000
## replicates)
##
## data: post.bagdisp
## X-squared = 63.609, df = NA, p-value = 0.007996
```

Simulated residuals for

```
chi.post.choice.sim$residuals
```

```
##
## Always As often as they can If cheaper or preferred Rarely or never
## P01 0.023074903 -0.814692287 0.668417242 0.802246243
## P02 -1.666064450 1.310954385 -0.032000522 -1.325926396
## P03 -0.688764567 0.895444602 -0.055708601 -1.395388420
## P04 1.488196757 -0.251151196 -0.365017829 -0.463724757
## P05 0.250217297 -0.071909250 -0.192582768 0.258198890
## P06 0.325817561 -0.922855639 0.004716666 2.017264197
```

```
chi.post.barrier.sim$residuals
```

```
##
## Council collection Unclear information Difficult transport
## P01 -0.18803615 0.09326301 -1.01514997
## P02 0.69443961 -0.69721552 1.27562493
## P03 0.50954727 -0.57875772 -0.40924351
## P04 -0.32438048 1.76432208 0.65254148
## P05 -0.15385544 -1.24526343 -0.24553358
## P06 -0.43226304 0.44838710 -0.36723933
##
## No local facilities No support Ends up in landfills Forgetting
## P01 0.39171677 -0.05958796 1.38627162 -1.59511255
## P02 -0.73862221 0.59766662 -1.90490281 0.43082022
## P03 -0.13884677 -0.13805418 1.96832092 0.53571429
## P04 -0.81198556 1.20253797 -1.06306846 0.82823645
## P05 1.07570575 -0.68888889 0.84522824 -0.23570226
## P06 0.24686980 -1.07164497 -0.93516351 0.06350006
##
## Recycling a hassle Household disagrees Recycling not important
## P01 0.20938142 -0.92870878 0.14805502
## P02 -0.50602431 0.19266866 -0.90829511
## P03 -0.20328928 -0.78262379 -0.78262379
## P04 -0.73335181 -1.01242284 -0.02469324
## P05 0.14907120 1.15950181 0.10540926
## P06 1.16466803 1.39150649 1.39150649
##
## Other Already doing everything
```

```
## P01 0.37319614 0.69123724
## P02 0.41851107 0.52009333
## P03 -0.70000000 -0.75025297
## P04 -0.90553851 -0.78547060
## P05 0.32998316 0.23102450
## P06 0.48260048 0.05551121
```

```
chi.post.barrier2.sim$residuals
```

```
##
## Limited alternatives No SUP-free alternatives Alternatives expensive
## P01 1.13573559 0.08813933 -0.95647499
## P02 -0.48007435 -0.27369851 0.52737030
## P03 -0.91103714 0.18206663 1.11176860
## P04 -0.10476454 -0.34137245 -0.82049168
## P05 -0.79504639 1.20157848 -0.07669650
## P06 1.08434609 -0.87471871 0.50279107
##
## Limited functioning Forgetting reusables Reducing not important
## P01 1.26169041 -0.72331764 -0.16193679
## P02 -0.56568886 1.71269768 0.58378437
## P03 -0.35571326 -0.40657856 -1.26194295
## P04 -0.35189561 -0.41905818 0.81777280
## P05 -0.38497419 0.67082039 1.08517595
## P06 0.38842325 -0.88354126 -1.41950696
##
## Other No barriers
## P01 -1.17473401 -0.34262414
## P02 0.59186403 -1.40129810
## P03 0.02020305 0.94868330
## P04 -0.49975604 2.37466301
## P05 0.46666667 -1.56524758
## P06 0.68250015 -0.08032193
```

```
chi.post.mainconsid.sim$residuals
```

```
##
## Value for money Price Quality Deals/discounts
## P01 0.325002928 -0.179071805 -0.816189934 0.715371129
## P02 -0.143303987 0.248711142 -1.711056252 0.825595780
## P03 0.896400173 -0.836210092 0.676150843 -0.663993200
## P04 -0.687368091 1.147051297 -0.480299242 0.290209215
## P05 0.773523110 -0.588725690 1.045239328 -0.776580275
## P06 -1.034981139 -0.009026436 1.451301368 -0.513079546
##
## Use-by-dates/longevity Convenience Ease of recycling packaging
## P01 1.663420234 0.209381422 -1.434748972
## P02 0.453986670 0.272474630 1.768791279
## P03 -0.545976537 -1.106797181 0.794934100
## P04 -1.694107435 -0.034921515 -0.240149621
## P05 -0.327569210 -0.596284794 -0.482418151
## P06 0.563440714 1.164668027 -0.222027448
##
```

##		Sustainability	Brand	Ethics	Other
##	P01	0.505843777	0.373196145	0.148055023	-0.587367006
##	P02	-0.099004368	0.418511069	0.192668659	-0.574456265
##	P03	-1.261942946	0.728571429	0.495129338	-0.494974747
##	P04	0.205208904	0.198776747	0.963036357	2.483162814
##	P05	0.431455497	-0.848528137	-0.948683298	-0.600000000
##	P06	-0.010567049	-0.787400787	-0.880340843	-0.556776436

```
chi.post.litter.sim$residuals
```

##		Strongly agree	Agree	Neither agree nor disagree	Disagree
##	P01	-0.70339014	0.57790860		-0.37785374 -0.32347748
##	P02	1.58251774	-1.30171403		0.08623037 -1.14891253
##	P03	-0.47626482	0.48375083		0.19917282 0.02020305
##	P04	0.25775577	-0.38349335		0.04095613 0.28111277
##	P05	-1.10029482	1.26666667		-0.49859341 1.30000000
##	P06	0.42195151	-0.62063610		0.62277968 -0.21552636

##		Strongly disagree
##	P01	2.78091321
##	P02	-0.81240384
##	P03	-0.70000000
##	P04	0.19877675
##	P05	-0.84852814
##	P06	-0.78740079

```
chi.post.attitude.sim$residuals
```

##		1 (Not concerned)	2	3	4	5
##	P01	0.15870264	-0.78065376	0.72478285	-1.01237357	-1.05197319
##	P02	0.25820976	-0.16514456	0.85929766	0.27516929	-1.57019183
##	P03	-0.71893855	-0.28749445	-0.90246124	1.02243802	0.54455775
##	P04	-0.65245350	0.44447832	-1.17448712	1.30155077	0.33717724
##	P05	-0.39010392	1.26491106	-0.13987993	-1.41796476	1.20973955
##	P06	1.37603876	-0.62475802	0.65254148	-0.09364472	0.55429077

##		6 7 (Very concerned)
##	P01	0.43113793 1.76739130
##	P02	0.25002164 0.77500620
##	P03	0.43525402 -0.84356087
##	P04	-0.43680819 -0.30444161
##	P05	-0.34016803 -0.11917591
##	P06	-0.23080704 -1.43563885

```
chi.post.ocean.sim$residuals
```

##		Always	Most of the time	Sometimes	Rarely	Never
##	P01	0.95145418	0.25026185	-0.59587957	0.20204271	0.03941711
##	P02	-0.07624564	0.20277791	0.17407766	-0.28603878	-0.48065055

```
## P03 -1.52561463      0.35300904  0.70710678 -0.86681056 -0.05716911
## P04  1.06659212      0.14727035 -0.46852129 -0.37067287  0.81154245
## P05  0.31362808     -0.39753514  0.16666667  0.36514837 -0.60596167
## P06 -1.13338368     -0.52802361  0.17960530  0.88536488  0.22485500
```

```
chi.post.actions.sim$residuals
```

```
##
##      Yes, definitely Yes, probably No, probably not No, definitely not
## P01      -0.70616869   -0.33928623      1.68257215      0.07441029
## P02      1.35731055   -1.69492364      1.09061116     -0.60494974
## P03      0.38482459    0.33129380     -0.98797288     -0.29935769
## P04     -1.31779695    0.61447289      0.06231040      2.49389721
## P05      0.28482760    0.61738438     -0.98487266     -1.40712473
## P06      0.21102076    0.44017258     -1.03227910     -0.53991690
##
##      I don't know
## P01      0.50584378
## P02      0.58378437
## P03     -0.46951409
## P04     -0.40735499
## P05     -0.22226495
## P06     -0.01056705
```

```
chi.post.attplast.sim$residuals
```

```
##
##      Will go out of their way to avoid
## P01      0.57335083
## P02     -0.44607618
## P03      0.70866274
## P04     -0.19900518
## P05     -0.31739682
## P06     -0.20371316
##
##      If option is readily available, will avoid
## P01     -0.75094277
## P02      0.17173824
## P03      0.83112602
## P04     -0.25280259
## P05     -0.19795077
## P06      0.38018780
##
##      Will avoid only without extra costs Not a priority
## P01      1.26301421   -0.92142197
## P02      0.13899926    0.19419964
## P03     -1.91519811   -1.03250061
## P04      0.32190821    0.70161360
## P05      0.79230011    0.02010076
## P06     -0.99722083    0.86103327
```

```
chi.post.zerow.sim$residuals
```

```
##
##      Yes, shops regularly Yes, shops occasionally Yes, visited at least once
## P01      0.37644133      -0.95610169      0.42266694
## P02     -1.51986842      -1.77539297     -0.48241815
## P03     -0.54597654      0.16953317     -1.13143098
## P04     -0.51354476     -0.06048584      0.48690160
## P05      2.19219394      1.54919334      0.80829038
## P06     -0.11540352      1.08978641     -0.37330261
##
##      Yes, never visited No, but would like to shop there
## P01     -0.04619943     -0.03412618
## P02     -0.92376043      0.76764947
## P03      0.37157839      0.33746828
## P04      0.93234559      0.68869669
## P05      1.54775824     -1.51448037
## P06     -2.06864598     -0.21600691
##
##      No, not likely to shop there
## P01      0.31811594
## P02      1.96048413
## P03     -0.15564171
## P04     -2.16565670
## P05     -1.82168898
## P06      2.23372562
```

```
chi.post.bottpurchase.sim$residuals
```

```
##
##      None      1-2      3-5      6-10      11-15      16+
## P01 -0.74370141  0.07559664 -0.43990958  0.62555733  1.50382236 -0.26704812
## P02 -1.40712473 -0.33757695  0.82728515  0.22608370  1.05331935 -1.51986842
## P03  4.56106713  0.29719441 -0.84288876 -0.68586107 -0.21466758 -0.54597654
## P04 -0.29328529 -0.39343124  0.67351206 -0.30039526 -0.45349166 -0.51354476
## P05 -0.78928003  0.87396330 -0.02443389 -0.08767946 -0.76784806  0.30237158
## P06 -0.63058259 -0.48501078 -0.38837836  0.15649273 -1.13338368  2.59997341
##
##      I don't know
## P01 -1.31339255
## P02 -0.50602431
## P03 -0.20328928
## P04  1.36193908
## P05 -1.34164079
## P06  1.96788736
```

```
chi.post.bottdisp.sim$residuals
```

```
##
##      General waste bin Recycling bin Recycling centre
## P01     -0.30466273     0.05583645     -0.55200557
```

```

## P02      -0.68934898    0.52741543    -0.50602431
## P03      -0.71893855    0.60264061    -1.10679718
## P04       0.19764878   -0.39512195     2.06036937
## P05       0.97072371   -0.78607460     0.14907120
## P06       0.39839133    0.16268789    -0.44177063
##
## Specialist waste collection    Landfill Deposit return scheme
## P01      -0.18883154    0.14805502     1.57705468
## P02      -0.14422505   -0.90829511     0.41851107
## P03       0.15388554   -0.78262379    -0.70000000
## P04      -1.19791486   -0.02469324    -0.90553851
## P05       1.55011520    1.15950181    -0.84852814
## P06      -0.08160261    0.25558283     0.48260048
##
## Indefinite storage          Other I don't know
## P01      -0.45746624    1.11514606   -0.41533119
## P02      -0.39389277   -0.57445626   -0.40620192
## P03      -0.68571429    1.52533034   -0.35000000
## P04       0.94971112   -0.64031242    1.75586126
## P05       1.24922198   -0.60000000   -0.42426407
## P06      -0.93980094   -0.55677644   -0.39370039

```

```
chi.post.tubspurchase.sim$residuals
```

```

##
##          None          1-2          3-5          6-10          11-15
## P01 -0.048653363  0.780770639  1.073663763 -1.739935742 -0.001117755
## P02 -0.696455673 -0.904918596  0.906850970 -0.273698508  1.012587961
## P03 -0.387649466 -0.063233601 -1.318275797  2.661271866  0.237424754
## P04  0.344291425  0.395297562 -0.612263801 -0.101812836  0.432689673
## P05  0.571547607 -1.007012450  0.051247074  0.690268490 -0.533979494
## P06  0.102652981  0.796782658 -0.247452621 -0.874718713 -1.176808243
##
##          16+ I don't know
## P01 -0.161936787 -1.313392554
## P02 -0.099004368 -0.506024314
## P03 -1.261942946 -1.106797181
## P04 -0.407354988  0.663508781
## P05  1.085175948  0.149071198
## P06  0.693902904  1.967887356

```

```
chi.post.tubdisp.sim$residuals
```

```

##
## General waste bin Recycling bin Recycling centre
## P01      -0.73605334    1.26014538    -0.44821959
## P02       1.80782303   -0.30760503    -0.81601332
## P03      -0.16483010   -0.16669802     1.29854097
## P04      -0.62636804   -0.49491753    -0.38757511
## P05      -0.12199886    0.16550941    -0.53397949
## P06      -0.09038552   -0.47299897     1.18152491
##
## Specialist waste collection    Landfill Deposit return scheme

```

```
## P01 -0.74370141 0.67072137 0.37319614
## P02 -1.40712473 0.71777575 -0.81240384
## P03 0.43713663 -0.60621778 -0.70000000
## P04 2.25702156 -0.78421936 1.30309201
## P05 -0.10886621 0.62598071 0.32998316
## P06 -0.63058259 -0.68190908 -0.78740079
##
## Indefinite storage Other I don't know
## P01 -0.46254092 -1.09886305 -1.01734950
## P02 -0.35327779 -0.14422505 0.01005038
## P03 -0.50479239 -0.92601296 1.47552596
## P04 0.81450982 1.30643676 -1.10905365
## P05 0.16002645 -1.12249722 0.88527041
## P06 0.19204614 1.83845883 0.07258662
```

```
chi.post.filmpurchase.sim$residuals
```

```
##
## None 1-2 3-5 6-10 11-15 16+
## P01 2.03649078 -0.39142817 0.42615962 -0.33804971 0.49060383 -0.62709231
## P02 -0.69645567 -0.23100258 0.19390873 0.08221426 0.61693593 -0.56285109
## P03 0.43713663 -0.40214440 0.01422705 1.38621939 -1.72824029 0.53538085
## P04 0.34429143 2.11581622 0.19796041 -1.07313454 -1.41288739 -1.40035806
## P05 -1.46969385 -0.54520517 -0.84504341 0.14634182 2.25700555 1.53333333
## P06 -0.63058259 -0.83695373 0.02069649 0.11588752 -0.42502858 0.72440805
##
## I don't know
## P01 -1.43874946
## P02 0.01421338
## P03 -1.21243557
## P04 0.98186814
## P05 -0.78928003
## P06 2.30235971
```

```
chi.post.filmreuse.sim$residuals
```

```
##
## Never Once 2-4 times 5-10 times More often
## P01 -0.58146471 0.18037197 0.55208821 0.64639468 0.25643882
## P02 0.65062097 -0.72824540 -0.63987408 1.43555149 -0.93757155
## P03 0.20272273 1.51553082 -1.79434844 0.43713663 -1.35554417
## P04 -0.34217165 -0.97335121 1.48174377 -0.93086200 1.66802790
## P05 0.23321224 -0.50191067 0.08981004 -0.10886621 0.18257419
## P06 -0.09589725 0.87404270 -0.12789071 -1.36381817 -0.21314340
```

```
chi.post.filmdisp.sim$residuals
```

```
##
## General waste bin Recycling bin Recycling centre
## P01 -0.10538223 0.03263284 0.62337427
## P02 -0.10964103 0.98045457 -1.67481342
## P03 0.97190263 -0.08042699 -1.44308697
```

```
## P04 -1.26517026 0.72303414 1.34721403
## P05 0.33301872 -1.12055887 0.53736223
## P06 0.45639101 -0.59847867 0.22485500
##
## Specialist waste collection Landfill Deposit return scheme
## P01 -0.03440312 -0.71937473 -0.58736701
## P02 0.01005038 -0.70356236 -0.57445626
## P03 -0.85732141 -0.60621778 -0.49497475
## P04 0.69428562 0.49093407 0.92142520
## P05 0.88527041 0.62598071 1.06666667
## P06 -0.96436508 0.78456207 -0.55677644
##
## Indefinite storage Other I don't know
## P01 -0.71937473 0.94854325 -0.03440312
## P02 -0.70356236 1.01508819 0.01005038
## P03 -0.60621778 -0.85732141 -0.85732141
## P04 1.76608750 -0.20738402 0.69428562
## P05 -0.73484692 -1.03923048 0.88527041
## P06 0.78456207 0.07258662 -0.96436508
```

```
chi.post.bagpurchase.sim$residuals
```

```
##
## None 1-2 3-5 6-10 11-15 16+
## P01 -0.47738460 0.19687111 -0.15329490 0.95145418 1.66342023 -0.32347748
## P02 -0.04525557 0.92441734 -0.41109095 -0.07624564 -0.86191672 -1.14891253
## P03 0.29637738 0.83598223 -0.55226268 -0.21466758 -1.30958009 0.02020305
## P04 0.35380902 0.05411481 -0.27450259 -0.45349166 0.07673657 -1.28062485
## P05 -0.89133762 -0.23100258 1.89066796 0.31362808 0.93231237 0.46666667
## P06 0.84046706 -1.71794601 -0.64493235 -0.55066714 -0.79424775 2.47855317
##
## I don't know
## P01 -1.09886305
## P02 0.78625916
## P03 -0.92601296
## P04 0.47165289
## P05 -1.12249722
## P06 1.83845883
```

```
chi.post.bagreuse.sim$residuals
```

```
##
## Never Once 2-4 times 5-10 times More often
## P01 0.7146050 0.8747746 1.4874009 -1.1726922 -1.1246045
## P02 -1.3773212 -0.8387647 0.6777680 0.1324102 0.4390625
## P03 0.1039145 1.1242066 -0.4125586 -0.8793468 0.2592725
## P04 1.0492232 -2.0044407 -2.0761054 1.4914974 1.1782443
## P05 -1.0922011 1.4497649 -0.4252766 0.6761234 -0.4000000
## P06 0.5451565 -0.3139942 0.9442388 -0.5616385 -0.4210747
```

```
chi.post.bagdisp.sim$residuals
```

```
##
##      General waste bin Recycling bin Recycling centre
## P01      -0.53708356   -0.21838901    1.78728958
## P02      1.11271952   -0.55952643   -0.81601332
## P03      1.54883967    0.81320621   -0.82369146
## P04     -2.27451847    0.03223719   -0.38757511
## P05      0.24835121   -0.87482227   -0.09629138
## P06      0.38976443    0.99040275    0.23819165
##
##      Specialist waste collection   Landfill Deposit return scheme
## P01      1.37903558 -0.58736701    0.07441029
## P02     -1.14891253 -0.57445626    0.87958950
## P03     -0.98994949 -0.49497475   -1.16081868
## P04      1.84285039 -0.64031242   -0.83573858
## P05     -1.20000000  2.73333333    2.14622054
## P06     -0.21552636 -0.55677644   -1.30575649
##
##      Indefinite storage      Other I don't know
## P01     -0.61247187  0.01631642  0.35915113
## P02      0.62285924 -1.94807597  0.42261412
## P03     -0.67975438 -1.67854103 -0.09761905
## P04      1.93579313  1.97337662  0.11411258
## P05     -0.76062752  1.40561332 -0.48711800
## P06     -0.79876630 -0.29923933 -0.33443367
```

Simulated observed and expected values

```
chi.post.choice.sim$observed
```

```
##
##      Always As often as they can If cheaper or preferred Rarely or never
## P01      8          31          23          7
## P02      3          42          19          2
## P03      4          30          14          1
## P04     14          41          22          5
## P05      9          37          20          6
## P06      8          27          18          9
```

```
chi.post.barrier.sim$observed
```

```
##
##      Council collection Unclear information Difficult transport
## P01      19          11          3
## P02      22          8          8
## P03      16          6          3
## P04      22          19          8
## P05      20          7          5
## P06      16          11          4
##
##      No local facilities No support Ends up in landfills Forgetting
## P01      7          3          9          1
## P02      4          4          1          5
```

```

##      P03      4      2      8      4
##      P04      5      6      4      7
##      P05      9      2      8      4
##      P06      6      1      3      4
##
##      Recycling a hassle Household disagrees Recycling not important Other
##      P01      2      0      1      1
##      P02      1      1      0      1
##      P03      1      0      0      0
##      P04      1      0      1      0
##      P05      2      2      1      1
##      P06      3      2      2      1
##
##      Already doing everything
##      P01      12
##      P02      11
##      P03      5
##      P04      9
##      P05      11
##      P06      9

```

```
chi.post.barrier2.sim$observed
```

```

##
##      Limited alternatives No SUP-free alternatives Alternatives expensive
##      P01      20      15      11
##      P02      13      13      16
##      P03      8      11      14
##      P04      18      16      14
##      P05      13      20      15
##      P06      18      10      15
##
##      Limited functioning Forgetting reusables Reducing not important Other
##      P01      10      5      2      0
##      P02      5      11      3      2
##      P03      4      4      0      1
##      P04      7      7      4      1
##      P05      6      9      4      2
##      P06      7      4      0      2
##
##      No barriers
##      P01      6
##      P02      3
##      P03      7
##      P04      15
##      P05      3
##      P06      6

```

```
chi.post.mainconsid.sim$observed
```

```

##
##      Value for money Price Quality Deals/discounts Use-by-dates/longevity
##      P01      22      16      12      6      5

```

```
## P02          19   17    8          6          3
## P03          18    9   13          2          1
## P04          21   25   16          6          0
## P05          25   15   20          3          2
## P06          14   15   19          3          3
##
## Convenience Ease of recycling packaging Sustainability Brand Ethics Other
## P01           2          1          3      1      1      0
## P02           2          7          2      1      1      0
## P03           0          4          0      1      1      0
## P04           2          4          3      1      2      2
## P05           1          3          3      0      0      0
## P06           3          3          2      0      0      0
```

```
chi.post.litter.sim$observed
```

```
##
## Strongly agree Agree Neither agree nor disagree Disagree
## P01          26   31          8      1
## P02          37   20          9      0
## P03          19   22          7      1
## P04          37   31         11      2
## P05          25   36          8      3
## P06          29   22         10      1
##
## Strongly disagree
## P01           3
## P02           0
## P03           0
## P04           1
## P05           0
## P06           0
```

```
chi.post.litter.sim$expected
```

```
##
## Strongly agree Agree Neither agree nor disagree Disagree
## P01      29.8425 27.945          9.1425   1.38
## P02      28.5450 26.730          8.7450   1.32
## P03      21.1925 19.845          6.4925   0.98
## P04      35.4650 33.210         10.8650   1.64
## P05      31.1400 29.160          9.5400   1.44
## P06      26.8150 25.110          8.2150   1.24
##
## Strongly disagree
## P01           0.69
## P02           0.66
## P03           0.49
## P04           0.82
## P05           0.72
## P06           0.62
```

```
chi.post.attitude.sim$observed
```

```
##
##      1 (Not concerned)  2  3  4  5  6  7 (Very concerned)
## P01                5  2  9  9 15 11                18
## P02                5  3  9 13 12 10                14
## P03                2  2  3 12 16  8                 6
## P04                4  5  5 20 25 10                13
## P05                4  6  7  8 26  9                12
## P06                7  2  8 11 20  8                 6
```

```
chi.post.attitude.sim$expected
```

```
##
##      1 (Not concerned)  2      3      4      5      6  7 (Very concerned)
## P01          4.6575 3.45 7.0725 12.5925 19.665  9.66          11.9025
## P02          4.4550 3.30 6.7650 12.0450 18.810  9.24          11.3850
## P03          3.3075 2.45 5.0225  8.9425 13.965  6.86          8.4525
## P04          5.5350 4.10 8.4050 14.9650 23.370 11.48          14.1450
## P05          4.8600 3.60 7.3800 13.1400 20.520 10.08          12.4200
## P06          4.1850 3.10 6.3550 11.3150 17.670  8.68          10.6950
```

```
chi.post.ocean.sim$observed
```

```
##
##      Always Most of the time Sometimes Rarely Never
## P01      5              19          31      11      3
## P02      3              18          34       9      2
## P03      0              14          28       5      2
## P04      6              22          38      11      5
## P05      4              17          37      12      2
## P06      1              14          32      12      3
```

```
chi.post.ocean.sim$expected
```

```
##
##      Always Most of the time Sometimes Rarely Never
## P01 3.2775          17.94          34.5 10.35 2.9325
## P02 3.1350          17.16          33.0  9.90 2.8050
## P03 2.3275          12.74          24.5  7.35 2.0825
## P04 3.8950          21.32          41.0 12.30 3.4850
## P05 3.4200          18.72          36.0 10.80 3.0600
## P06 2.9450          16.12          31.0  9.30 2.6350
```

```
chi.post.actions.sim$observed
```

```
##
##      Yes, definitely Yes, probably No, probably not No, definitely not
## P01          21              31              12              2
## P02          30              22              10              1
```

```
##      P03          19          25          3          1
##      P04          22          43          9          6
##      P05          27          38          5          0
##      P06          23          32          4          1
##
##      I don't know
##      P01          3
##      P02          3
##      P03          1
##      P04          2
##      P05          2
##      P06          2
```

```
chi.post.actions.sim$expected
```

```
##
##      Yes, definitely Yes, probably No, probably not No, definitely not
##      P01          24.495          32.9475          7.4175          1.8975
##      P02          23.430          31.5150          7.0950          1.8150
##      P03          17.395          23.3975          5.2675          1.3475
##      P04          29.110          39.1550          8.8150          2.2550
##      P05          25.560          34.3800          7.7400          1.9800
##      P06          22.010          29.6050          6.6650          1.7050
##
##      I don't know
##      P01          2.2425
##      P02          2.1450
##      P03          1.5925
##      P04          2.6650
##      P05          2.3400
##      P06          2.0150
```

```
chi.post.attplast.sim$observed
```

```
##
##      Will go out of their way to avoid
##      P01          20
##      P02          15
##      P03          15
##      P04          20
##      P05          17
##      P06          15
##
##      If option is readily available, will avoid
##      P01          33
##      P02          37
##      P03          31
##      P04          43
##      P05          38
##      P06          36
##
##      Will avoid only without extra costs Not a priority
##      P01          14          2
```

##	P02	10	4
##	P03	2	1
##	P04	13	6
##	P05	13	4
##	P06	6	5

```
chi.post.attplast.sim$expected
```

```
##
## Will go out of their way to avoid
## P01 17.595
## P02 16.830
## P03 12.495
## P04 20.910
## P05 18.360
## P06 15.810
##
## If option is readily available, will avoid
## P01 37.605
## P02 35.970
## P03 26.705
## P04 44.690
## P05 39.240
## P06 33.790
##
## Will avoid only without extra costs Not a priority
## P01 10.005 3.795
## P02 9.570 3.630
## P03 7.105 2.695
## P04 11.890 4.510
## P05 10.440 3.960
## P06 8.990 3.410
```

```
chi.post.zerow.sim$observed
```

```
##
## Yes, shops regularly Yes, shops occasionally Yes, visited at least once
## P01 3 3 5
## P02 0 1 3
## P03 1 4 1
## P04 2 6 6
## P05 6 9 6
## P06 2 7 3
##
## Yes, never visited No, but would like to shop there
## P01 15 30
## P02 11 33
## P03 12 23
## P04 22 40
## P05 22 23
## P06 6 26
##
## No, not likely to shop there
```

```
## P01 13
## P02 18
## P03 8
## P04 6
## P05 6
## P06 18
```

```
chi.post.zerow.sim$expected
```

```
##
## Yes, shops regularly Yes, shops occasionally Yes, visited at least once
## P01 2.415 5.175 4.14
## P02 2.310 4.950 3.96
## P03 1.715 3.675 2.94
## P04 2.870 6.150 4.92
## P05 2.520 5.400 4.32
## P06 2.170 4.650 3.72
##
## Yes, never visited No, but would like to shop there
## P01 15.18 30.1875
## P02 14.52 28.8750
## P03 10.78 21.4375
## P04 18.04 35.8750
## P05 15.84 31.5000
## P06 13.64 27.1250
##
## No, not likely to shop there
## P01 11.9025
## P02 11.3850
## P03 8.4525
## P04 14.1450
## P05 12.4200
## P06 10.6950
```

```
chi.post.bottpurchase.sim$observed
```

```
##
## None 1-2 3-5 6-10 11-15 16+ I don't know
## P01 1 24 21 15 6 2 0
## P02 0 21 26 13 5 0 1
## P03 7 18 13 7 2 1 1
## P04 2 26 31 14 3 2 4
## P05 1 29 24 13 2 3 0
## P06 1 19 19 12 1 6 4
```

```
chi.post.bottdisp.sim$observed
```

```
##
## General waste bin Recycling bin Recycling centre
## P01 4 57 1
## P02 3 58 1
## P03 2 44 0
```

```

##      P04          6          64          5
##      P05          7          53          2
##      P06          5          52          1
##
##      Specialist waste collection Landfill Deposit return scheme
##      P01          1          1          2
##      P02          1          0          1
##      P03          1          0          0
##      P04          0          1          0
##      P05          3          2          0
##      P06          1          1          1
##
##      Indefinite storage Other I don't know
##      P01          2          1          0
##      P02          2          0          0
##      P03          1          1          0
##      P04          5          0          1
##      P05          5          0          0
##      P06          1          0          0

```

```
chi.post.tubspurchase.sim$observed
```

```

##
##      None 1-2 3-5 6-10 11-15 16+ I don't know
##      P01   2  22  30   8   5   2          0
##      P02   1  14  28  13   7   2          1
##      P03   1  13  12  19   4   0          0
##      P04   3  24  26  17   7   2          3
##      P05   3  15  26  18   4   4          2
##      P06   2  20  21  10   2   3          4

```

```
chi.post.tubdisp.sim$observed
```

```

##
##      General waste bin Recycling bin Recycling centre
##      P01          12          44          4
##      P02          21          33          3
##      P03          10          25          6
##      P04          15          40          5
##      P05          15          39          4
##      P06          13          30          7
##
##      Specialist waste collection Landfill Deposit return scheme
##      P01          1          1          1
##      P02          0          1          0
##      P03          2          0          0
##      P04          6          0          2
##      P05          2          1          1
##      P06          1          0          0
##
##      Indefinite storage Other I don't know
##      P01          6          0          0
##      P02          6          1          1

```

##	P03		4	0	2
##	P04		11	3	0
##	P05		8	0	2
##	P06		7	3	1

```
chi.post.filmpurchase.sim$observed
```

##		None	1-2	3-5	6-10	11-15	16+	I don't know
##	P01	5	13	23	18	8	2	0
##	P02	1	13	21	19	8	2	2
##	P03	2	9	15	19	1	3	0
##	P04	3	26	26	18	4	1	4
##	P05	0	13	18	21	13	6	1
##	P06	1	10	19	18	5	4	5

```
chi.post.filmreuse.sim$observed
```

##		Never	Once	2-4 times	5-10 times	More often
##	P01	37	15	11	3	3
##	P02	43	11	7	4	1
##	P03	30	15	2	2	0
##	P04	46	13	16	1	6
##	P05	44	13	10	2	3
##	P06	36	16	8	0	2

```
chi.post.filmdisp.sim$observed
```

##		General waste bin	Recycling bin	Recycling centre
##	P01	45	16	4
##	P02	43	19	0
##	P03	38	11	0
##	P04	45	22	6
##	P05	50	12	4
##	P06	44	12	3

##		Specialist waste collection	Landfill	Deposit return scheme
##	P01	1	0	0
##	P02	1	0	0
##	P03	0	0	0
##	P04	2	1	1
##	P05	2	1	1
##	P06	0	1	0

##		Indefinite storage	Other	I don't know
##	P01	0	2	1
##	P02	0	2	1
##	P03	0	0	0
##	P04	2	1	2
##	P05	0	0	2
##	P06	1	1	0

```
chi.post.bagpurchase.sim$observed
```

```
##
##      None 1-2 3-5 6-10 11-15 16+ I don't know
## P01   37  14   7    5     5    1           0
## P02   38  16   6    3     1    0           2
## P03   30  12   4    2     0    1           0
## P04   50  16   8    3     3    0           2
## P05   36  13  13    4     4    2           0
## P06   41   6   5    2     1    4           3
```

```
chi.post.bagreuse.sim$observed
```

```
##
##      Never Once 2-4 times 5-10 times More often
## P01     7   10          22           8        22
## P02     2    5          18          12        29
## P03     4    8          10           6        21
## P04     9    3          10          20        40
## P05     3   12          15          15        27
## P06     6    6          18           9        23
```

```
chi.post.bagdisp.sim$observed
```

```
##
##      General waste bin Recycling bin Recycling centre
## P01           22           15           9
## P02           29           13           3
## P03           24           14           2
## P04           17           19           5
## P05           27           13           5
## P06           24           18           5
##
##      Specialist waste collection Landfill Deposit return scheme
## P01           3           0           2
## P02           0           0           3
## P03           0           0           0
## P04           4           0           1
## P05           0           2           5
## P06           1           0           0
##
##      Indefinite storage Other I don't know
## P01          12           4           2
## P02          16           0           2
## P03           8           0           1
## P04          25           9           2
## P05          12           7           1
## P06          10           3           1
```