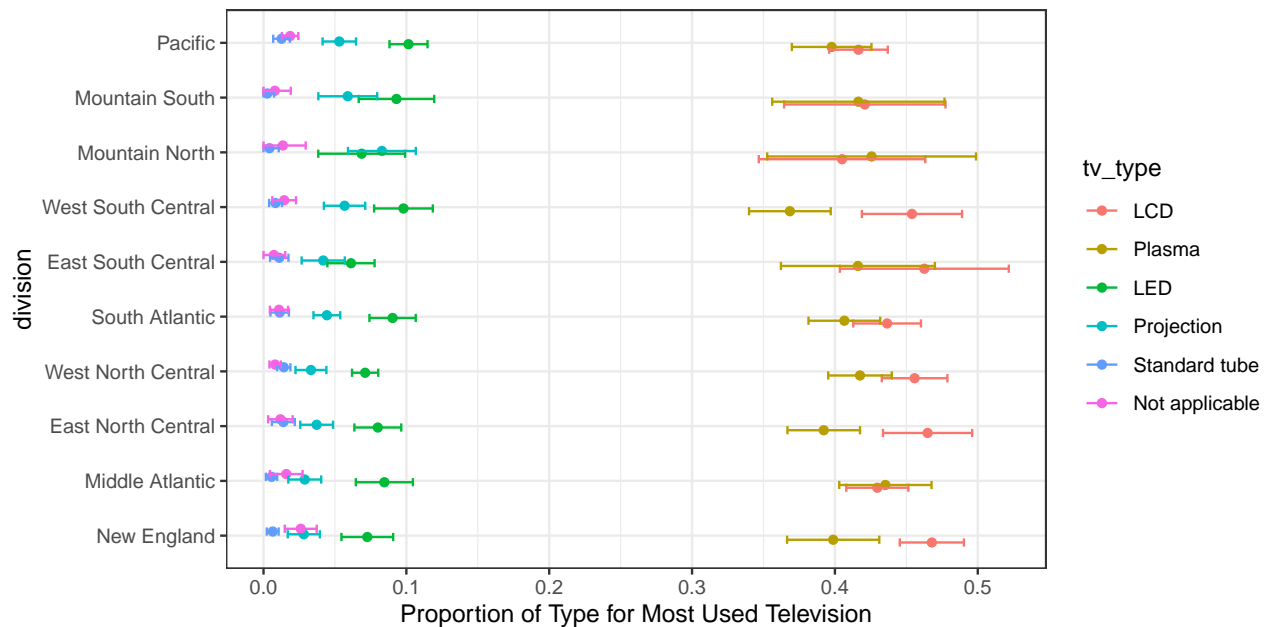


pic

Xu Zhihao

10/7/2020

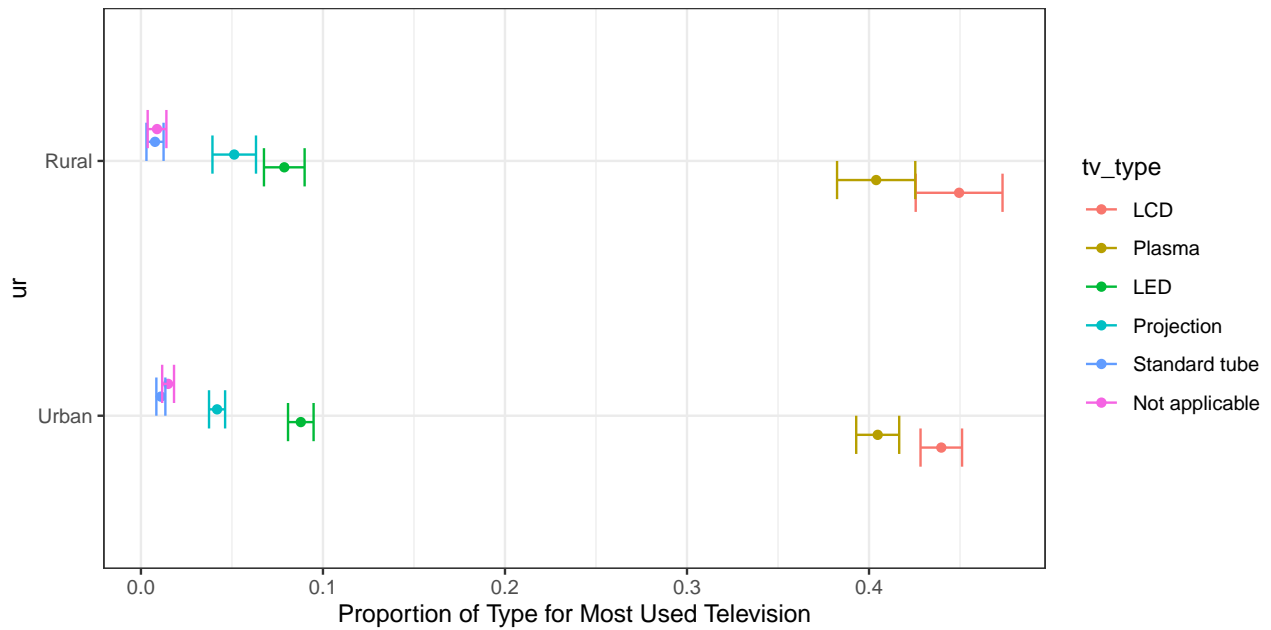
```
prop_by_div_ci_09 = plot_tv_type(long_weights_09, recs_09, prop_by_div_09,  
                                by_obj = "division", year = 2009)
```



```
prop_by_div_ci_09
```

```
## # A tibble: 60 x 6  
## # Groups:   division [10]  
##   division      tv_type      prop_type      se      lwr      upr  
##   <fct>         <fct>         <dbl>    <dbl>    <dbl>    <dbl>  
## 1 New England   LCD             0.468  0.0115  0.445  0.490  
## 2 New England   Plasma          0.399  0.0165  0.367  0.431  
## 3 New England   LED             0.0727 0.00924 0.0545 0.0908  
## 4 New England   Projection      0.0282 0.00573 0.0170 0.0394  
## 5 New England   Standard tube   0.00643 0.00211 0.00230 0.0106  
## 6 New England   Not applicable  0.0261 0.00570 0.0149 0.0372  
## 7 Middle Atlantic LCD             0.430  0.0111  0.408  0.451  
## 8 Middle Atlantic Plasma          0.435  0.0165  0.403  0.468  
## 9 Middle Atlantic LED             0.0846 0.0102  0.0646 0.105  
## 10 Middle Atlantic Projection      0.0289 0.00588 0.0173 0.0404  
## # ... with 50 more rows
```

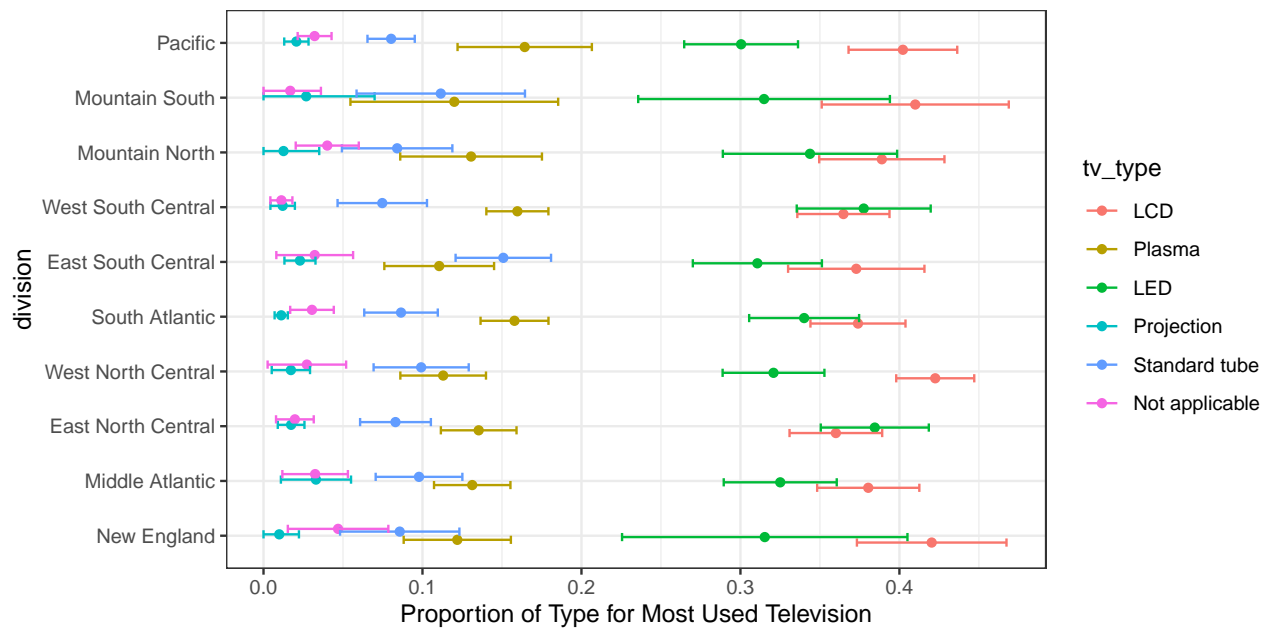
```
prop_by_ur_ci_09 = plot_tv_type(long_weights_09, recs_09, prop_by_ur_09,  
                                by_obj = "ur", year = 2009)
```



```
prop_by_ur_ci_09
```

```
## # A tibble: 12 x 6
## # Groups:   ur [2]
##   ur   tv_type      prop_type      se      lwr      upr
##   <fct> <fct>          <dbl>    <dbl>    <dbl>    <dbl>
## 1 Urban LCD          0.440  0.00582  0.428  0.451
## 2 Urban Plasma       0.405  0.00602  0.393  0.417
## 3 Urban LED          0.0878  0.00358  0.0808  0.0948
## 4 Urban Projection   0.0418  0.00225  0.0374  0.0462
## 5 Urban Standard tube 0.0109  0.00127  0.00846  0.0134
## 6 Urban Not applicable 0.0149  0.00166  0.0117  0.0182
## 7 Rural LCD          0.449  0.0122  0.426  0.473
## 8 Rural Plasma       0.404  0.0110  0.382  0.425
## 9 Rural LED          0.0788  0.00570  0.0676  0.0899
## 10 Rural Projection  0.0512  0.00610  0.0393  0.0632
## 11 Rural Standard tube 0.00774  0.00240  0.00303  0.0124
## 12 Rural Not applicable 0.00884  0.00262  0.00370  0.0140
```

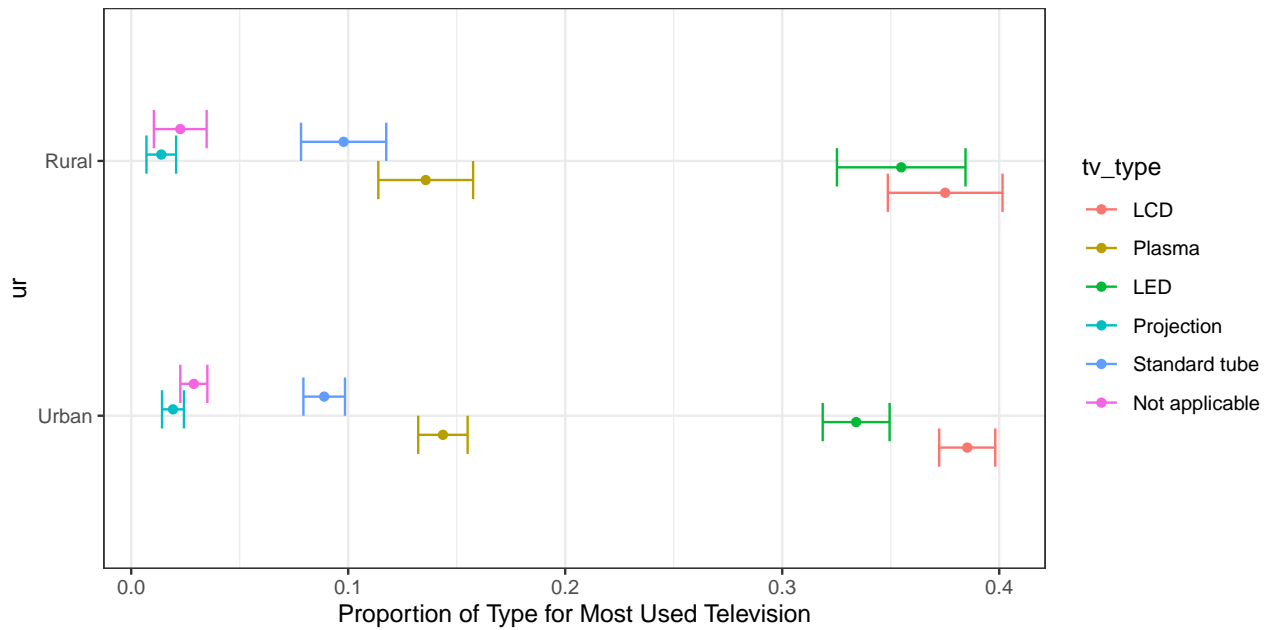
```
prop_by_div_ci_15 = plot_tv_type(long_weights_15, recs_15, prop_by_div_15,
                                  by_obj = "division", year = 2015)
```



```
prop_by_div_ci_15
```

```
## # A tibble: 60 x 6
## # Groups:   division [10]
##   division      tv_type      prop_type      se      lwr      upr
##   <fct>         <fct>         <dbl>    <dbl> <dbl> <dbl>
## 1 New England   LCD             0.420  0.0240 0.373 0.467
## 2 New England   Plasma          0.122  0.0172 0.0882 0.156
## 3 New England   LED             0.315  0.0458 0.226 0.405
## 4 New England   Projection      0.00991 0.00632 0      0.0223
## 5 New England   Standard tube   0.0857  0.0192 0.0481 0.123
## 6 New England   Not applicable  0.0469  0.0161 0.0153 0.0785
## 7 Middle Atlantic LCD             0.380  0.0164 0.348 0.413
## 8 Middle Atlantic Plasma          0.131  0.0123 0.107 0.155
## 9 Middle Atlantic LED             0.325  0.0181 0.289 0.361
## 10 Middle Atlantic Projection    0.0330  0.0113 0.0109 0.0551
## # ... with 50 more rows
```

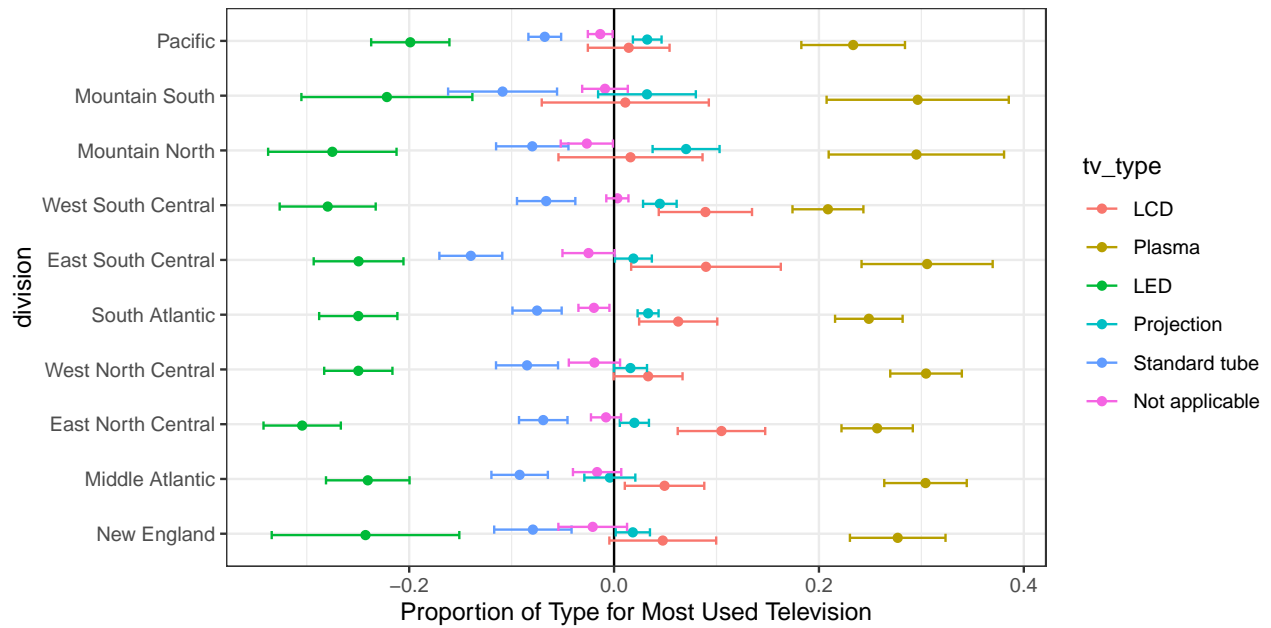
```
prop_by_ur_ci_15 = plot_tv_type(long_weights_15, recs_15, prop_by_ur_15,
                                by_obj = "ur", year = 2015)
```



```
prop_by_ur_ci_15
```

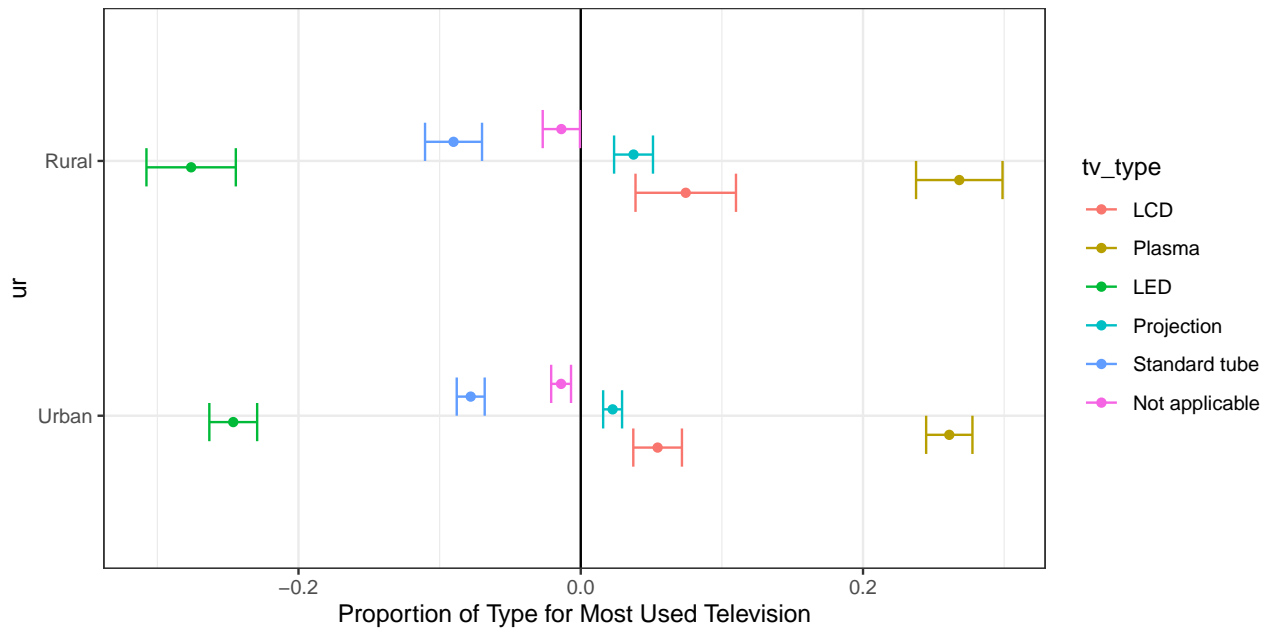
```
## # A tibble: 12 x 6
## # Groups:   ur [2]
##   ur   tv_type      prop_type      se      lwr      upr
##   <fct> <fct>      <dbl>    <dbl>    <dbl>    <dbl>
## 1 Urban LCD          0.385  0.00659  0.372    0.398
## 2 Urban Plasma       0.144  0.00581  0.132    0.155
## 3 Urban LED          0.334  0.00786  0.319    0.349
## 4 Urban Projection   0.0193 0.00257  0.0142   0.0243
## 5 Urban Standard tube 0.0889 0.00489  0.0793   0.0985
## 6 Urban Not applicable 0.0289 0.00318  0.0226   0.0351
## 7 Rural LCD          0.375  0.0135   0.349    0.402
## 8 Rural Plasma       0.136  0.0111   0.114    0.158
## 9 Rural LED          0.355  0.0151   0.325    0.384
## 10 Rural Projection   0.0139 0.00349  0.00703  0.0207
## 11 Rural Standard tube 0.0979 0.0100   0.0783   0.118
## 12 Rural Not applicable 0.0226 0.00620  0.0105   0.0348
```

```
plot_diff_tv_type(prop_by_div_ci_09, prop_by_div_ci_15, by_obj = "division")
```



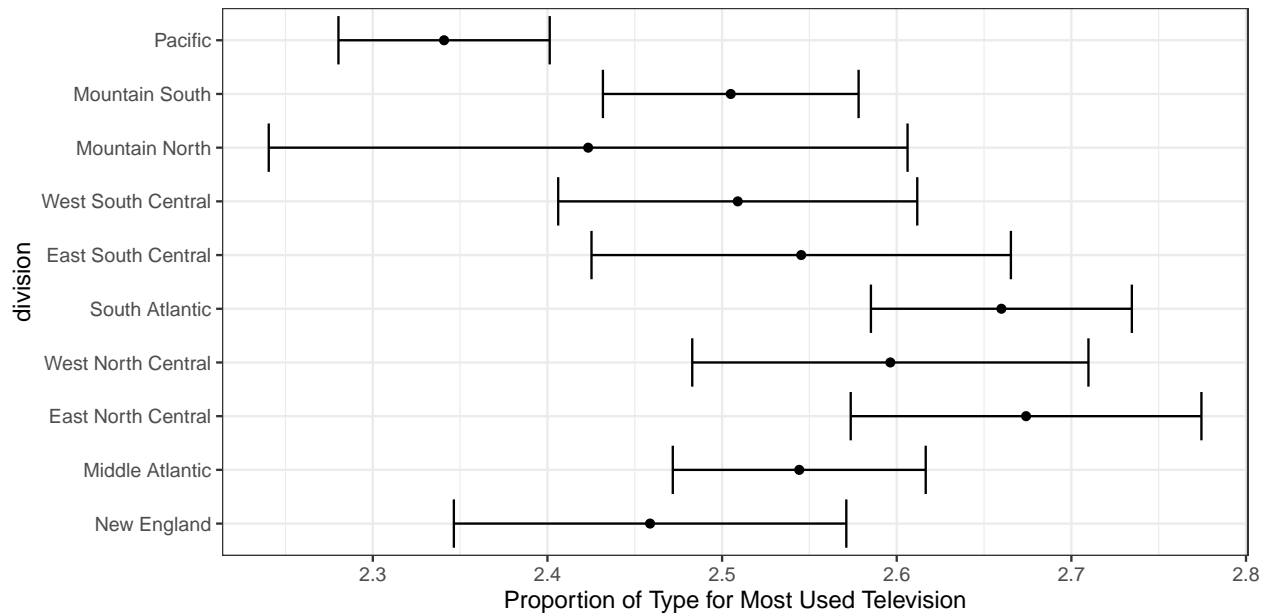
```
## # A tibble: 60 x 5
## # Groups:   division [10]
##   division      tv_type      dif      lwr      upr
##   <fct>         <fct>      <dbl>    <dbl>    <dbl>
## 1 New England   LCD          0.0475 -0.00459 0.0997
## 2 New England   Plasma        0.277    0.230    0.324
## 3 New England   LED         -0.243   -0.334   -0.151
## 4 New England   Projection    0.0183  0.00158  0.0350
## 5 New England   Standard tube -0.0793 -0.117   -0.0415
## 6 New England   Not applicable -0.0208 -0.0544  0.0127
## 7 Middle Atlantic LCD          0.0493  0.0105  0.0881
## 8 Middle Atlantic Plasma        0.304    0.264    0.344
## 9 Middle Atlantic LED         -0.240   -0.281   -0.200
## 10 Middle Atlantic Projection -0.00413 -0.0290  0.0208
## # ... with 50 more rows
```

```
plot_diff_tv_type(prop_by_ur_ci_09, prop_by_ur_ci_15, by_obj = "ur")
```



```
## # A tibble: 12 x 5
## # Groups:   ur [2]
##   ur   tv_type      dif    lwr    upr
##   <fct> <fct>      <dbl>  <dbl>  <dbl>
## 1 Urban LCD      0.0545  0.0372  0.0717
## 2 Urban Plasma   0.261   0.245   0.278
## 3 Urban LED     -0.246  -0.263  -0.229
## 4 Urban Projection 0.0226  0.0159  0.0293
## 5 Urban Standard tube -0.0780 -0.0879 -0.0681
## 6 Urban Not applicable -0.0139 -0.0210 -0.00690
## 7 Rural LCD      0.0744  0.0388  0.110
## 8 Rural Plasma   0.268   0.238   0.299
## 9 Rural LED     -0.276  -0.308  -0.244
## 10 Rural Projection 0.0374  0.0236  0.0512
## 11 Rural Standard tube -0.0902 -0.110  -0.0700
## 12 Rural Not applicable -0.0138 -0.0270 -0.000580
```

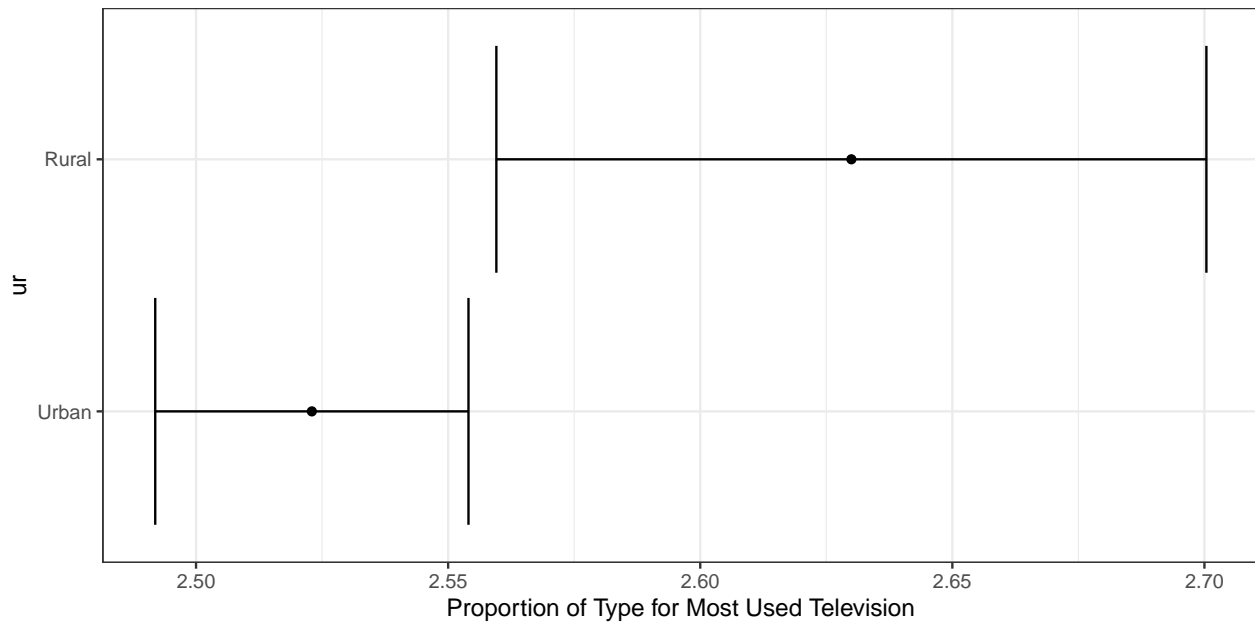
```
num_by_div_ci_09 = plot_tv_num(long_weights_09, recs_09, mean_by_div_09,
                               by_obj = "division", year = 2009)
```



```
num_by_div_ci_09
```

```
## # A tibble: 10 x 5
##   division      mean_tv      se    lwr    upr
##   <fct>      <dbl>  <dbl> <dbl> <dbl>
## 1 New England      2.46 0.0573  2.35  2.57
## 2 Middle Atlantic  2.54 0.0369  2.47  2.62
## 3 East North Central 2.67 0.0512  2.57  2.77
## 4 West North Central 2.60 0.0579  2.48  2.71
## 5 South Atlantic   2.66 0.0381  2.59  2.73
## 6 East South Central 2.55 0.0613  2.43  2.67
## 7 West South Central 2.51 0.0525  2.41  2.61
## 8 Mountain North    2.42 0.0933  2.24  2.61
## 9 Mountain South    2.50 0.0373  2.43  2.58
## 10 Pacific          2.34 0.0309  2.28  2.40
```

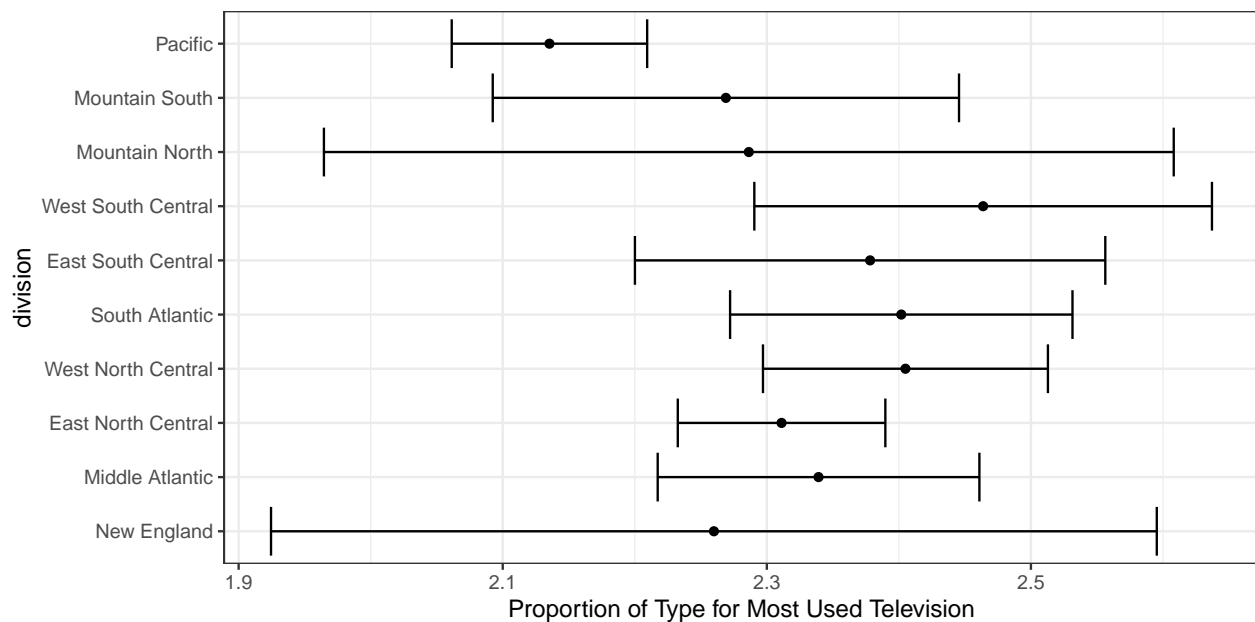
```
num_by_ur_ci_09 = plot_tv_num(long_weights_09, recs_09, mean_by_ur_09,
                               by_obj = "ur", year = 2009)
```



```
num_by_ur_ci_09
```

```
## # A tibble: 2 x 5
##   ur    mean_tv    se  lwr  upr
##   <fct>   <dbl> <dbl> <dbl> <dbl>
## 1 Urban    2.52 0.0158  2.49  2.55
## 2 Rural    2.63 0.0359  2.56  2.70
```

```
num_by_div_ci_15 = plot_tv_num(long_weights_15, recs_15, mean_by_div_15,
                               by_obj = "division", year = 2015)
```



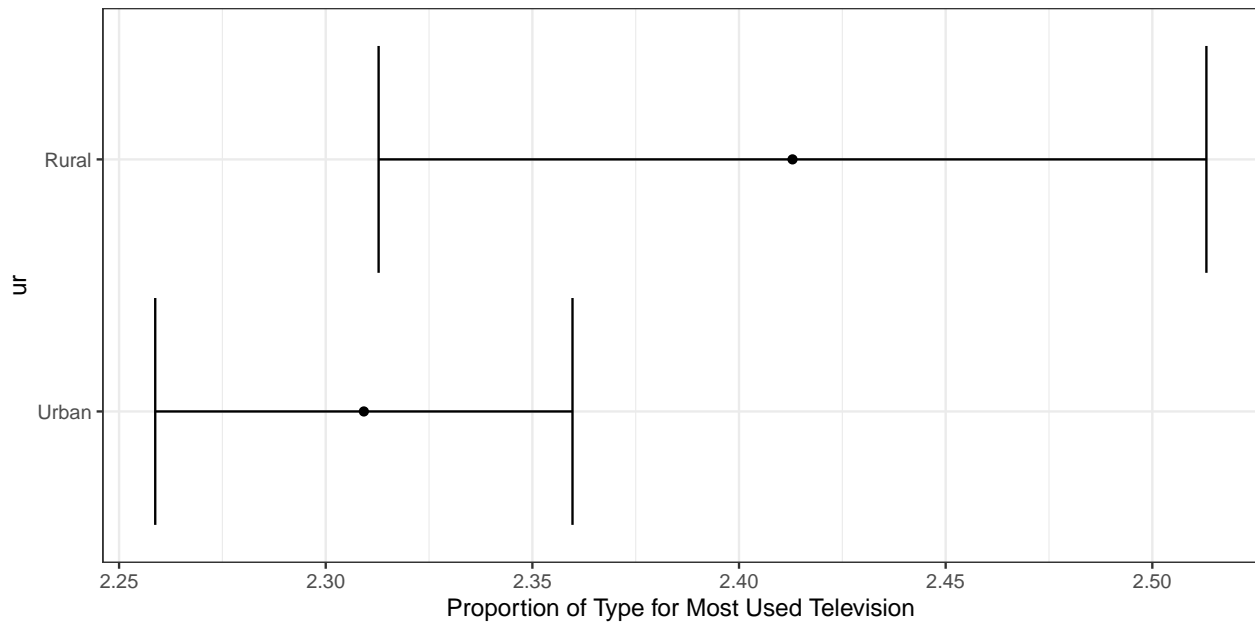
```
num_by_div_ci_15
```

```
## # A tibble: 10 x 5
##   division    mean_tv    se  lwr  upr
```



```
##      <fct>                <dbl> <dbl> <dbl> <dbl>
## 1 New England            2.26 0.171  1.92  2.60
## 2 Middle Atlantic        2.34 0.0621 2.22  2.46
## 3 East North Central    2.31 0.0401 2.23  2.39
## 4 West North Central    2.40 0.0551 2.30  2.51
## 5 South Atlantic        2.40 0.0661 2.27  2.53
## 6 East South Central    2.38 0.0909 2.20  2.56
## 7 West South Central    2.46 0.0884 2.29  2.64
## 8 Mountain North        2.29 0.164  1.96  2.61
## 9 Mountain South        2.27 0.0901 2.09  2.45
## 10 Pacific               2.14 0.0378 2.06  2.21
```

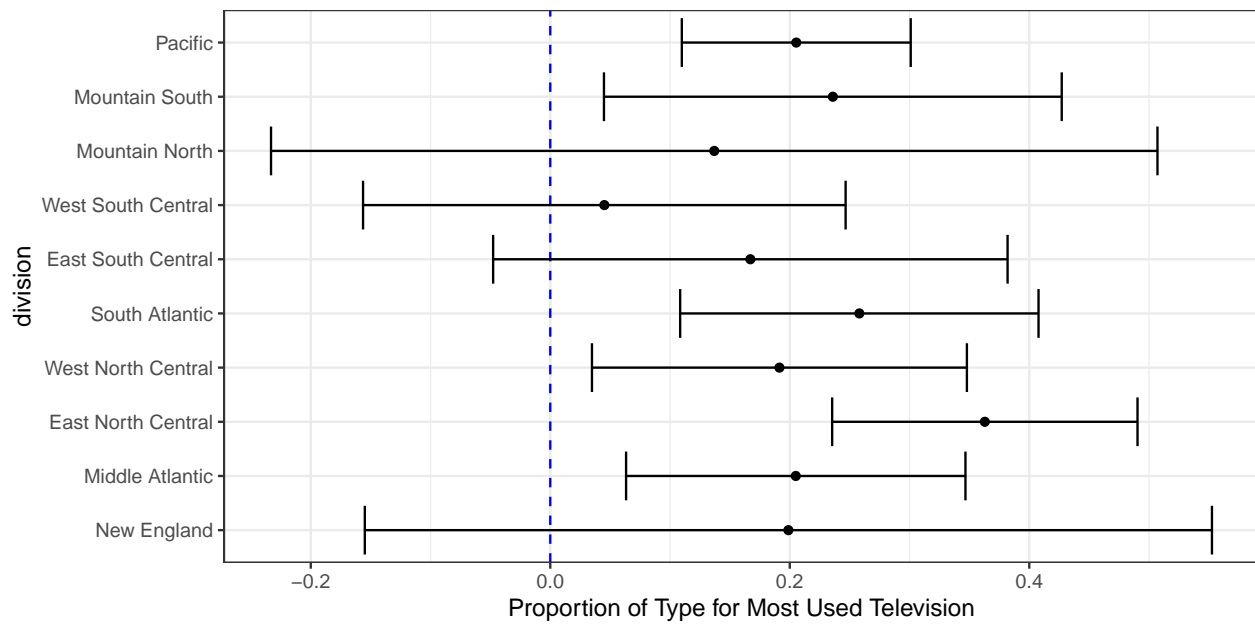
```
num_by_ur_ci_15 = plot_tv_num(long_weights_15, recs_15, mean_by_ur_15,
                              by_obj = "ur", year = 2015)
```



```
num_by_ur_ci_15
```

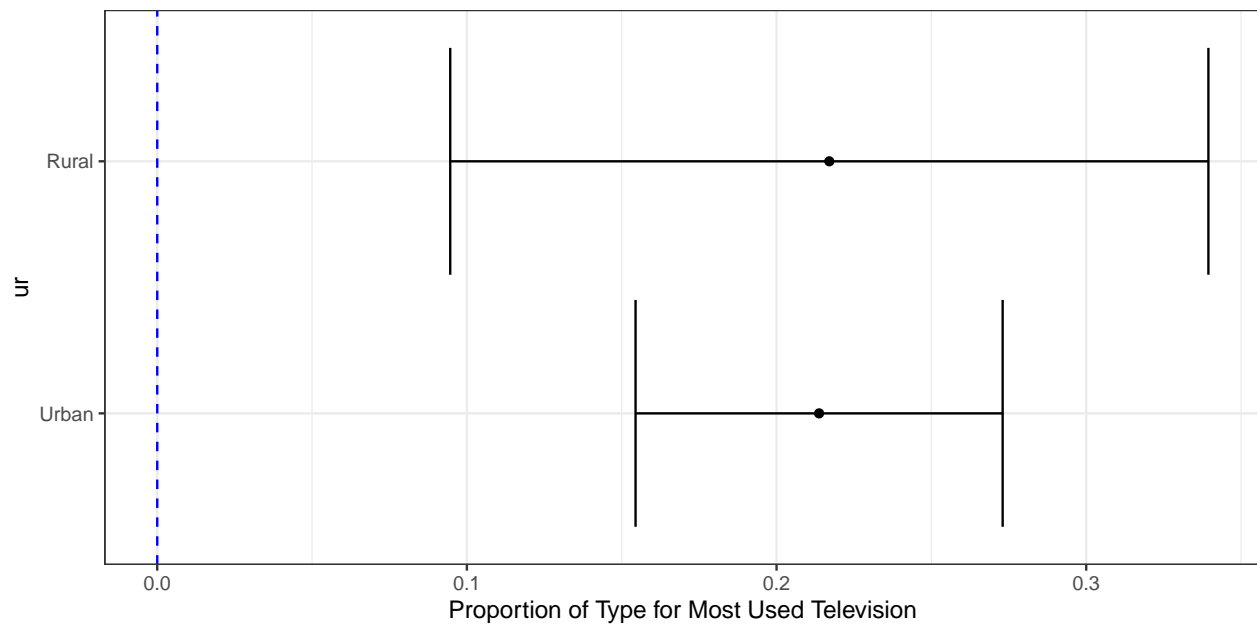
```
## # A tibble: 2 x 5
##   ur   mean_tv   se   lwr   upr
##   <fct>   <dbl> <dbl> <dbl> <dbl>
## 1 Urban     2.31 0.0258  2.26  2.36
## 2 Rural     2.41 0.0511  2.31  2.51
```

```
plot_diff_tv_num(num_by_div_ci_09, num_by_div_ci_15, by_obj = "division")
```



```
## # A tibble: 10 x 4
## # Groups:   division [10]
##   division      dif    lwr    upr
##   <fct>         <dbl> <dbl> <dbl>
## 1 New England    0.199 -0.155 0.553
## 2 Middle Atlantic 0.205  0.0633 0.347
## 3 East North Central 0.363  0.235 0.490
## 4 West North Central 0.191  0.0348 0.348
## 5 South Atlantic   0.258  0.108 0.408
## 6 East South Central 0.167 -0.0477 0.382
## 7 West South Central 0.0451 -0.156 0.247
## 8 Mountain North   0.137 -0.233 0.507
## 9 Mountain South   0.236  0.0448 0.427
## 10 Pacific         0.205  0.110 0.301
```

```
plot_diff_tv_num(num_by_ur_ci_09, num_by_ur_ci_15, by_obj = "ur")
```



```
## # A tibble: 2 x 4
## # Groups:   ur [2]
##   ur      dif    lwr    upr
##   <fct> <dbl> <dbl> <dbl>
## 1 Urban 0.214 0.154 0.273
## 2 Rural 0.217 0.0946 0.339
```