

TBD*
TBD

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Abstract

First sentence. Second sentence. Third sentence. Fourth sentence.

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*Code and data are available at: https://github.com/yangg1224/Political_Deepfake_Videos.git.

1 Introduction

2 Data

2.1 EDA

2.1.1 treat distribution

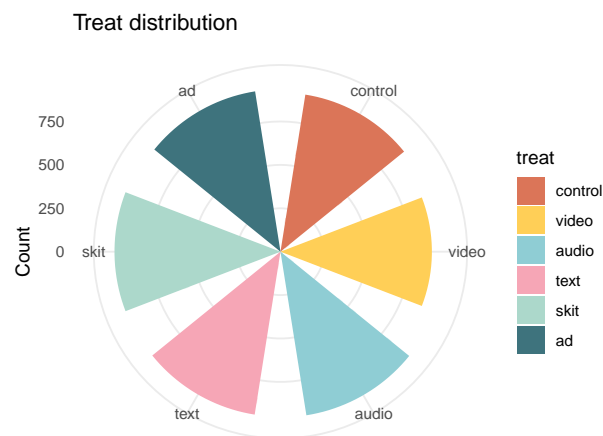


Figure 1: Employee numbers distribution

2.1.2 education level distribution by PID

2.1.3 sexism by education level

2.2 internet usage frequency by education level

```
## Warning: Use of 'EDA$educ' is discouraged. Use 'educ' instead.
```

```
## Warning: Use of 'EDA$meta_OS' is discouraged. Use 'meta_OS' instead.
```

```
## Warning: Use of 'EDA$age_65' is discouraged. Use 'age_65' instead.
```

2.2.1 post favor by treat

2.2.2 Average deception level by treat

```
## 'summarise()' ungrouping output (override with '.groups' argument)
```

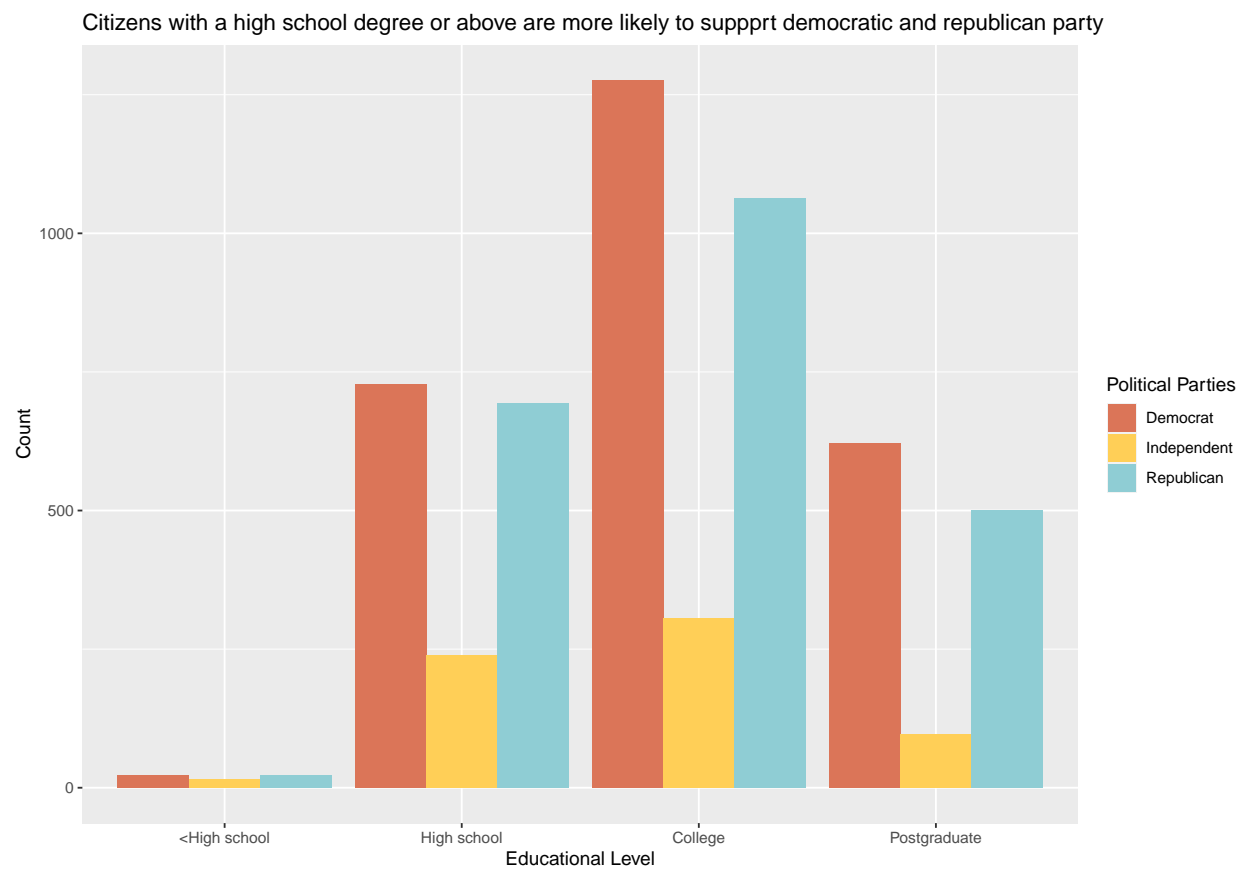


Figure 2: Educational level by PID

Table 1: Average deception level of each media format

treat	Average Deception Level
video	3.227538
audio	3.351178
text	3.304442
skit	2.568519
ad	2.991228

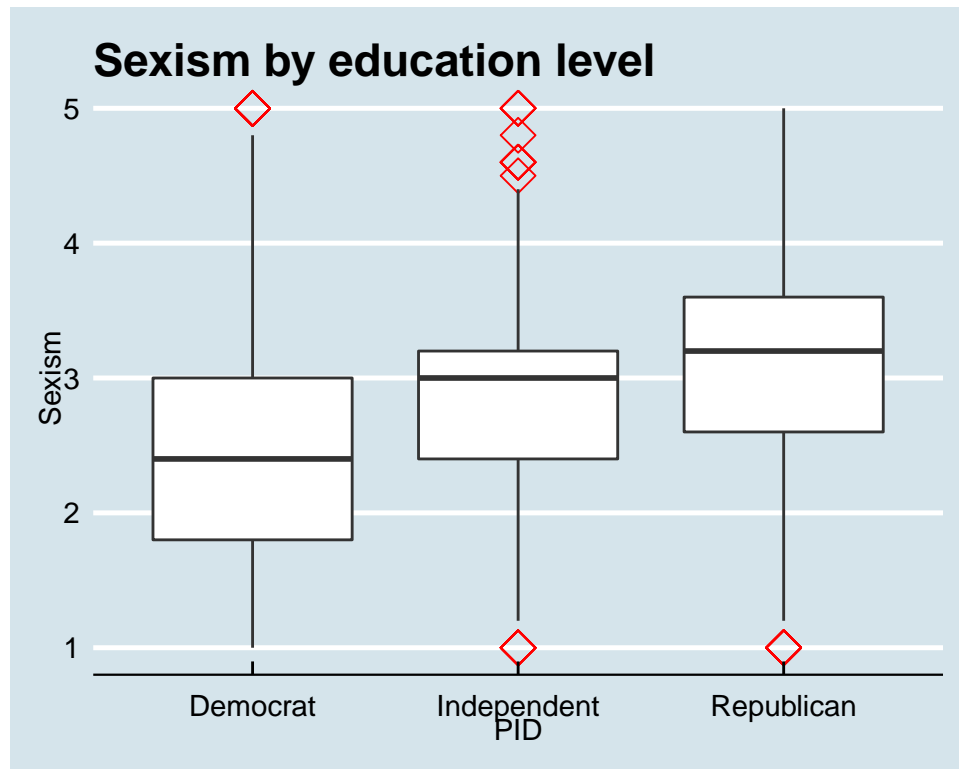


Figure 3: sexism by education level

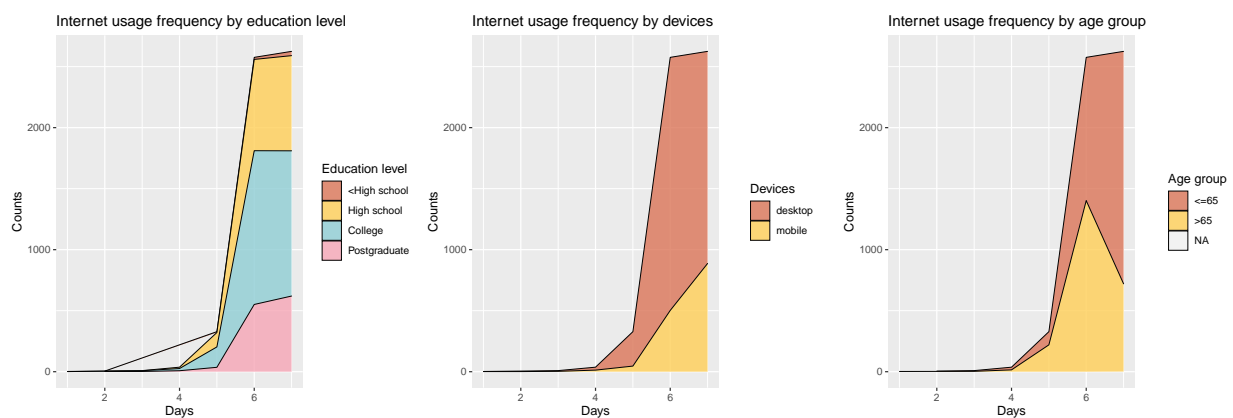


Figure 4: internet usages

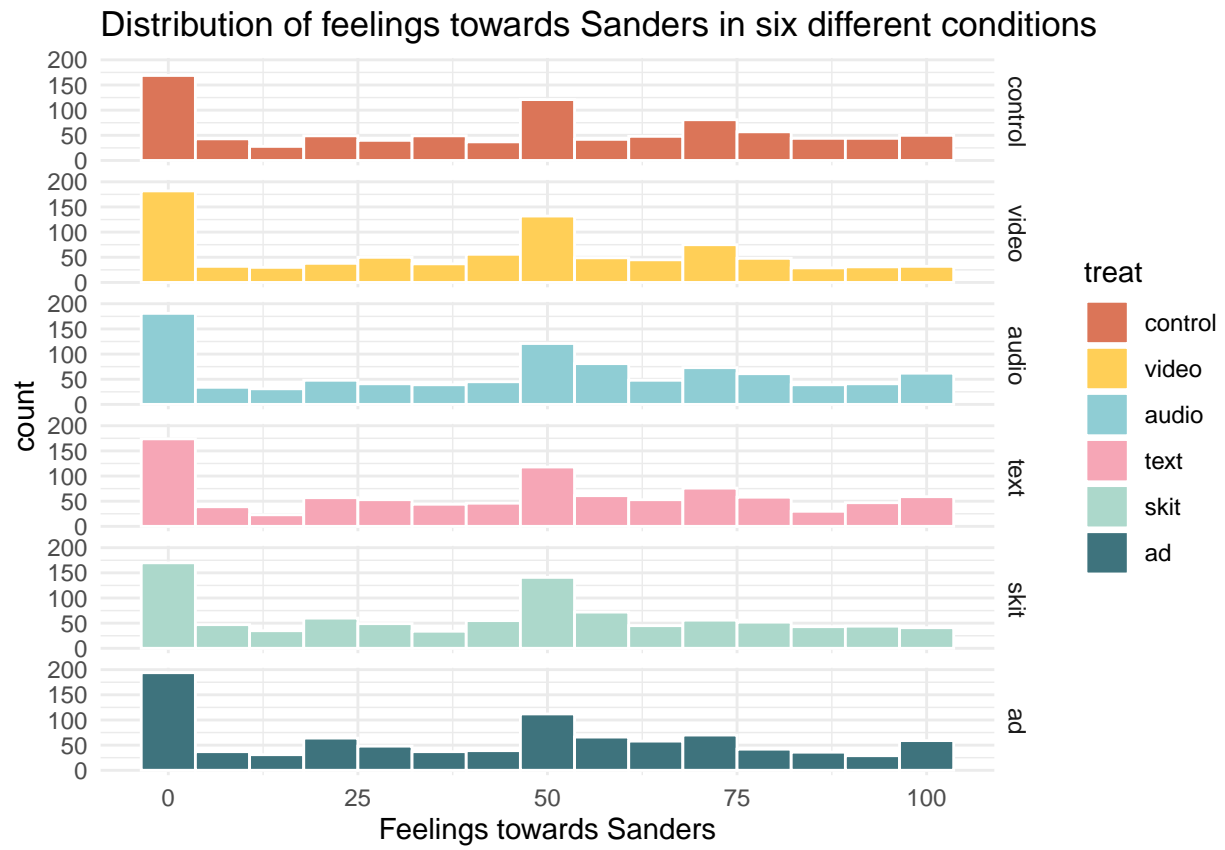


Figure 5: Distribution of feelings towards Sanders in six different situations

3 Model

3.1 T test1

Table 2: T test: Deception level of video vs audio

AVG_deception_video	AVG_deception_audio	p.value	conf.low	conf.high	method	alternative
3.228438	3.348243	0.0538155	-0.2415774	0.0019682	Welch Two Sample t-test	two.sided

3.2 T test2

Table 3: T test: Deception level of video vs text

AVG_deception_video	AVG_deception_text	p.value	conf.low	conf.high	method	alternative
3.228438	3.304207	0.2244956	-0.1980699	0.0465321	Welch Two Sample t-test	two.sided

3.3 T test3

Table 4: T test: Deception level of video vs skit

AVG_deception_video	AVG_deception_skit	p.value	conf.low	conf.high	method	alternative
3.228438	2.574586	0	0.5024785	0.8052267	Welch Two Sample t-test	two.sided

3.4 Feature selection

```
## randomForest 4.6-14

## Type rfNews() to see new features/changes/bug fixes.

##
## Attaching package: 'randomForest'

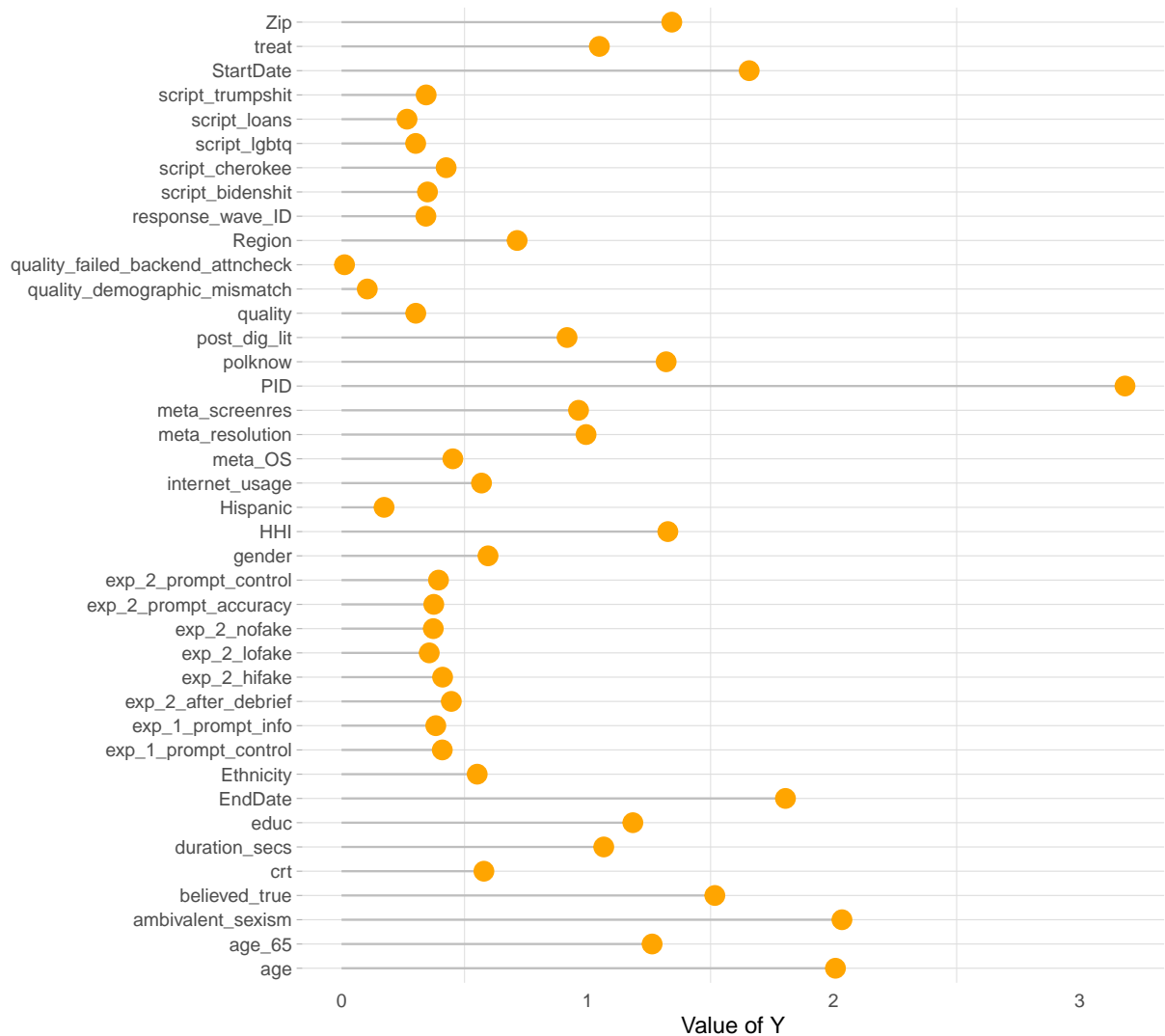
## The following object is masked from 'package:dplyr':
##
##   combine

## The following object is masked from 'package:ggplot2':
##
##   margin

## -----

## You have loaded plyr after dplyr - this is likely to cause problems.
## If you need functions from both plyr and dplyr, please load plyr first, then dplyr:
## library(plyr); library(dplyr)
```

```
## -----  
  
##  
## Attaching package: 'plyr'  
  
## The following object is masked from 'package:here':  
##  
##     here  
  
## The following object is masked from 'package:ggpubr':  
##  
##     mutate  
  
## The following objects are masked from 'package:dplyr':  
##  
##     arrange, count, desc, failwith, id, mutate, rename, summarise,  
##     summarize  
  
## The following object is masked from 'package:purrr':  
##  
##     compact
```



3.5 regression model

```
##
## Call:
## lm(formula = post_favor_Sanders ~ ., data = Dummy_data)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -77.386 -17.115  -0.217  16.912  90.341
##
## Coefficients: (10 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)   8.965e+01  2.944e+01   3.045  0.002339 **
## Zip           3.785e-05  3.097e-05   1.222  0.221756
## quality_demographic_mismatch  2.226e+00  3.506e+00   0.635  0.525491
## quality_failed_backend_attncheck  1.678e+01  8.969e+00   1.871  0.061466 .
## duration_secs  1.341e-04  1.388e-04   0.966  0.334331
## ambivalent_sexism -3.456e+00  5.490e-01  -6.296  3.4e-10 ***
```


## polknow	1.826e+00	2.008e+00	0.909	0.363194	
## script_bidenshit	-3.456e+00	1.679e+00	-2.059	0.039568	*
## script_trumpshit	-3.498e+00	1.679e+00	-2.084	0.037212	*
## script_cherokee	-1.111e+00	1.664e+00	-0.668	0.504429	
## script_lgbtq	-1.476e+00	1.978e+00	-0.746	0.455592	
## script_loans	-2.630e+00	1.964e+00	-1.339	0.180586	
## believed_true	-2.796e+00	3.272e-01	-8.547	< 2e-16	***
## exp_1_prompt_controlTRUE	-1.707e+00	8.321e-01	-2.051	0.040320	*
## exp_1_prompt_infoTRUE	NA	NA	NA	NA	
## exp_2_prompt_accuracyTRUE	-1.124e+00	1.069e+01	-0.105	0.916290	
## exp_2_prompt_controlTRUE	-1.570e+00	1.069e+01	-0.147	0.883224	
## exp_2_after_debrief	-1.136e-01	8.305e-01	-0.137	0.891224	
## exp_2_nofakeTRUE	4.738e-01	1.017e+00	0.466	0.641181	
## exp_2_lofakeTRUE	-3.545e-01	1.016e+00	-0.349	0.727098	
## exp_2_hifakeTRUE	NA	NA	NA	NA	
## post_dig_lit	2.507e+00	3.169e+00	0.791	0.429003	
## internet_usage	7.316e-01	6.728e-01	1.087	0.276903	
## crt	1.008e+00	1.861e+00	0.542	0.587962	
## age_19	-6.074e+00	6.301e+00	-0.964	0.335134	
## age_20	-2.368e+00	6.585e+00	-0.360	0.719219	
## age_21	-9.785e+00	7.051e+00	-1.388	0.165322	
## age_22	-6.503e+00	6.270e+00	-1.037	0.299685	
## age_23	-9.657e+00	7.079e+00	-1.364	0.172561	
## age_24	-9.393e+00	6.292e+00	-1.493	0.135557	
## age_25	-3.309e+00	6.234e+00	-0.531	0.595602	
## age_26	-6.396e+00	6.200e+00	-1.032	0.302339	
## age_27	-3.228e+00	6.096e+00	-0.529	0.596504	
## age_28	-3.570e+00	6.416e+00	-0.556	0.577959	
## age_29	-6.142e+00	6.142e+00	-1.000	0.317347	
## age_30	2.138e+00	5.651e+00	0.378	0.705242	
## age_31	-2.444e+00	6.101e+00	-0.401	0.688803	
## age_32	4.261e-01	6.199e+00	0.069	0.945201	
## age_33	-4.829e+00	6.382e+00	-0.757	0.449315	
## age_34	-6.869e+00	6.405e+00	-1.073	0.283562	
## age_35	5.229e+00	5.582e+00	0.937	0.348933	
## age_36	-2.605e+00	5.930e+00	-0.439	0.660489	
## age_37	4.850e+00	5.975e+00	0.812	0.417054	
## age_38	6.464e+00	6.024e+00	1.073	0.283330	
## age_39	3.915e-01	6.042e+00	0.065	0.948349	
## age_40	9.894e+00	5.587e+00	1.771	0.076669	.
## age_41	-7.932e-01	6.088e+00	-0.130	0.896338	
## age_42	3.846e+00	6.148e+00	0.626	0.531606	
## age_43	2.695e+00	5.992e+00	0.450	0.652918	
## age_44	-7.518e+00	6.080e+00	-1.237	0.216306	
## age_45	-9.379e-02	6.127e+00	-0.015	0.987788	
## age_46	-1.068e+00	6.902e+00	-0.155	0.877034	
## age_47	-6.159e+00	6.683e+00	-0.922	0.356813	
## 'age_47 in'	2.937e+01	3.033e+01	0.968	0.332862	
## age_48	-3.641e+00	6.572e+00	-0.554	0.579561	
## age_49	-1.453e+00	6.119e+00	-0.237	0.812313	
## age_50	-1.506e+00	6.267e+00	-0.240	0.810092	
## age_51	-2.612e+00	6.328e+00	-0.413	0.679848	
## age_52	-3.320e+00	6.037e+00	-0.550	0.582386	
## age_53	3.790e+00	6.361e+00	0.596	0.551287	

## age_54	1.034e+00	6.127e+00	0.169	0.866042	
## age_55	-1.307e+00	5.995e+00	-0.218	0.827480	
## age_56	-3.152e+00	5.856e+00	-0.538	0.590378	
## age_57	1.988e+00	6.029e+00	0.330	0.741648	
## age_58	-5.474e+00	5.760e+00	-0.950	0.342056	
## age_59	-3.404e+00	5.715e+00	-0.596	0.551529	
## age_60	-8.086e-01	5.714e+00	-0.142	0.887472	
## age_61	-1.380e+00	5.688e+00	-0.243	0.808373	
## age_62	7.500e-01	5.734e+00	0.131	0.895934	
## age_63	-3.789e+00	5.683e+00	-0.667	0.504918	
## age_64	-1.230e+00	5.672e+00	-0.217	0.828281	
## age_66	1.138e+00	5.509e+00	0.207	0.836355	
## age_67	3.345e+00	5.531e+00	0.605	0.545331	
## age_68	5.953e+00	5.557e+00	1.071	0.284114	
## age_69	-1.717e+00	5.656e+00	-0.304	0.761509	
## age_70	2.273e+00	5.555e+00	0.409	0.682445	
## age_71	9.430e-02	5.659e+00	0.017	0.986706	
## age_72	9.035e-01	5.703e+00	0.158	0.874133	
## age_73	3.585e+00	5.747e+00	0.624	0.532840	
## age_74	5.034e+00	5.921e+00	0.850	0.395296	
## age_75	-7.653e+00	6.105e+00	-1.254	0.210067	
## age_76	3.892e+00	6.613e+00	0.589	0.556152	
## age_77	8.535e+00	6.721e+00	1.270	0.204143	
## age_78	-8.288e+00	6.651e+00	-1.246	0.212761	
## age_79	2.379e+00	7.346e+00	0.324	0.746063	
## age_80	-3.961e+00	8.447e+00	-0.469	0.639190	
## age_81	4.429e+00	8.911e+00	0.497	0.619173	
## age_82	6.091e+00	1.044e+01	0.583	0.559775	
## age_83	4.361e+00	1.123e+01	0.388	0.697804	
## age_84	-1.411e+01	1.564e+01	-0.903	0.366811	
## age_85	-7.749e+00	1.039e+01	-0.746	0.455936	
## age_86	1.572e+01	1.295e+01	1.214	0.224790	
## age_87	-1.923e+01	2.622e+01	-0.734	0.463253	
## age_88	-3.925e+00	1.400e+01	-0.280	0.779181	
## age_89	2.579e+01	1.925e+01	1.340	0.180433	
## age_91	1.683e+01	1.581e+01	1.064	0.287297	
## age_92	-1.166e+01	2.624e+01	-0.444	0.656865	
## age_93	-1.806e+01	2.692e+01	-0.671	0.502454	
## age_2000	-4.717e+01	3.689e+01	-1.279	0.201030	
## age_E2	-4.265e+00	2.663e+01	-0.160	0.872773	
## age_truthfully	-7.208e-01	1.887e+01	-0.038	0.969534	
## 'educ_<High school'	-3.454e+00	4.382e+00	-0.788	0.430702	
## 'educ_High school'	-5.053e+00	1.379e+00	-3.664	0.000252	***
## educ_College	-3.390e+00	1.183e+00	-2.865	0.004198	**
## educ_Postgraduate	NA	NA	NA	NA	
## 'HHI_\$100k-\$150k'	7.218e+00	2.028e+00	3.560	0.000376	***
## 'HHI_>\$150k'	4.751e+00	2.269e+00	2.094	0.036303	*
## 'HHI_\$25k-\$49k'	-1.438e+00	1.180e+00	-1.218	0.223131	
## 'HHI_\$50k-\$74k'	-6.865e-02	1.335e+00	-0.051	0.958979	
## 'HHI_\$75k-\$99k'	1.891e+00	1.315e+00	1.437	0.150699	
## 'HHI_N/A'	-1.600e+00	3.328e+00	-0.481	0.630769	
## Ethnicity_Black	2.235e+00	2.781e+00	0.804	0.421536	
## Ethnicity_Other	-1.370e+00	3.147e+00	-0.435	0.663266	
## Ethnicity_White	9.236e-01	2.157e+00	0.428	0.668486	

## 'Hispanic_Not Hispanic'	6.415e-02	2.143e+00	0.030	0.976117	
## Region_Northeast	6.237e+00	1.837e+00	3.395	0.000693	***
## Region_South	1.020e+00	1.174e+00	0.869	0.384946	
## Region_West	-5.608e-02	1.732e+00	-0.032	0.974164	
## response_wave_ID_SV_eyxdeX0uISXzakt	7.838e-02	1.080e+00	0.073	0.942171	
## 'quality_passed all quality screens'	-1.891e+00	1.469e+00	-1.288	0.197964	
## meta_OS_mobile	-1.033e+00	2.863e+00	-0.361	0.718178	
## meta_resolution_320x568	-5.043e+01	2.638e+01	-1.911	0.056020	.
## meta_resolution_320x569	-6.727e+01	2.732e+01	-2.462	0.013843	*
## meta_resolution_320x570	-3.595e+01	2.663e+01	-1.350	0.177094	
## meta_resolution_320x640	-4.957e+01	2.693e+01	-1.841	0.065735	.
## meta_resolution_320x658	-6.035e+01	2.990e+01	-2.018	0.043652	*
## meta_resolution_320x693	-7.468e+01	3.672e+01	-2.034	0.042065	*
## meta_resolution_320x694	-3.994e+01	2.990e+01	-1.336	0.181633	
## meta_resolution_353x725	-4.473e+01	3.666e+01	-1.220	0.222516	
## meta_resolution_360x640	-5.370e+01	2.602e+01	-2.064	0.039077	*
## meta_resolution_360x685	-1.439e+01	3.663e+01	-0.393	0.694361	
## meta_resolution_360x700	-3.883e+01	3.668e+01	-1.059	0.289865	
## meta_resolution_360x718	-2.086e+01	3.660e+01	-0.570	0.568789	
## meta_resolution_360x720	-4.366e+01	2.629e+01	-1.661	0.096789	.
## meta_resolution_360x740	-5.346e+01	2.625e+01	-2.037	0.041746	*
## meta_resolution_360x750	-5.096e+01	2.678e+01	-1.903	0.057164	.
## meta_resolution_360x756	-6.454e+01	3.174e+01	-2.033	0.042091	*
## meta_resolution_360x760	-4.970e+01	2.628e+01	-1.891	0.058674	.
## meta_resolution_360x768	-1.511e+01	3.686e+01	-0.410	0.681870	
## meta_resolution_360x771	-3.842e+01	3.667e+01	-1.048	0.294830	
## meta_resolution_360x774	-6.245e+01	2.900e+01	-2.154	0.031319	*
## meta_resolution_360x780	-4.921e+01	2.635e+01	-1.867	0.061916	.
## meta_resolution_360x800	-4.223e+01	2.613e+01	-1.617	0.106064	
## meta_resolution_360x820	-3.904e+01	2.836e+01	-1.376	0.168771	
## meta_resolution_361x722	-5.253e+01	3.659e+01	-1.436	0.151201	
## meta_resolution_375x667	-5.396e+01	2.601e+01	-2.075	0.038089	*
## meta_resolution_375x812	-6.173e+01	2.609e+01	-2.366	0.018026	*
## meta_resolution_377x670	-4.263e+01	3.672e+01	-1.161	0.245724	
## meta_resolution_383x808	-2.472e+00	3.660e+01	-0.068	0.946149	
## meta_resolution_384x854	-4.695e+01	3.171e+01	-1.481	0.138772	
## meta_resolution_393x699	-4.472e+01	3.657e+01	-1.223	0.221489	
## meta_resolution_393x786	-7.632e+01	3.166e+01	-2.411	0.015963	*
## meta_resolution_393x808	-4.952e+01	3.168e+01	-1.563	0.118165	
## meta_resolution_393x830	-1.720e+01	3.665e+01	-0.469	0.638939	
## meta_resolution_393x851	-4.657e+01	2.761e+01	-1.687	0.091725	.
## meta_resolution_393x873	-2.035e+01	2.994e+01	-0.680	0.496692	
## meta_resolution_396x696	-8.790e+00	3.661e+01	-0.240	0.810267	
## meta_resolution_396x781	-1.346e+01	3.657e+01	-0.368	0.712853	
## meta_resolution_400x834	-2.133e+01	3.655e+01	-0.583	0.559663	
## meta_resolution_400x854	3.174e+00	3.168e+01	0.100	0.920220	
## meta_resolution_408x725	-8.025e+01	3.655e+01	-2.195	0.028193	*
## meta_resolution_412x732	-4.034e+01	2.681e+01	-1.505	0.132466	
## meta_resolution_412x821	-2.237e+01	3.684e+01	-0.607	0.543725	
## meta_resolution_412x823	-4.204e+01	2.640e+01	-1.592	0.111382	
## meta_resolution_412x838	-8.236e+01	3.675e+01	-2.241	0.025071	*
## meta_resolution_412x846	-5.746e+01	2.654e+01	-2.165	0.030447	*
## meta_resolution_412x862	-2.357e+01	3.663e+01	-0.643	0.519995	
## meta_resolution_412x869	-5.696e+01	2.644e+01	-2.154	0.031274	*

## meta_resolution_412x876	-2.101e+01	3.679e+01	-0.571	0.567946	
## meta_resolution_412x877	-2.494e+01	2.992e+01	-0.834	0.404485	
## meta_resolution_412x883	NA	NA	NA	NA	
## meta_resolution_412x892	-5.036e+01	2.623e+01	-1.920	0.054986	.
## meta_resolution_412x915	-5.307e+01	2.735e+01	-1.940	0.052462	.
## meta_resolution_412x938	-3.644e+01	3.179e+01	-1.146	0.251731	
## meta_resolution_414x736	-5.382e+01	2.613e+01	-2.060	0.039466	*
## meta_resolution_414x836	-3.512e+01	3.654e+01	-0.961	0.336640	
## meta_resolution_414x896	-5.647e+01	2.601e+01	-2.171	0.029958	*
## meta_resolution_422x751	-2.598e+01	3.622e+01	-0.717	0.473376	
## meta_resolution_424x848	-6.146e+01	2.855e+01	-2.152	0.031424	*
## meta_resolution_432x864	-8.513e+01	3.654e+01	-2.330	0.019859	*
## meta_resolution_442x920	-5.004e+01	3.675e+01	-1.362	0.173369	
## meta_resolution_450x950	-5.149e+01	3.687e+01	-1.396	0.162701	
## meta_resolution_450x975	-2.878e+01	3.672e+01	-0.784	0.433307	
## meta_resolution_471x1019	-6.913e+01	3.658e+01	-1.890	0.058864	.
## meta_resolution_473x997	-9.256e+00	3.189e+01	-0.290	0.771654	
## meta_resolution_486x1025	-6.054e+01	3.673e+01	-1.648	0.099434	.
## meta_resolution_491x1064	-1.646e+01	3.652e+01	-0.451	0.652206	
## meta_resolution_546x410	-2.375e+01	3.689e+01	-0.644	0.519704	
## meta_resolution_586x781	-5.317e+01	3.658e+01	-1.453	0.146211	
## meta_resolution_588x1274	-9.580e+01	3.676e+01	-2.606	0.009188	**
## meta_resolution_600x960	-7.155e+01	3.176e+01	-2.253	0.024318	*
## meta_resolution_600x1024	-1.897e+01	3.655e+01	-0.519	0.603748	
## meta_resolution_600x1220	-9.215e+00	3.666e+01	-0.251	0.801532	
## meta_resolution_600x1334	-7.007e+01	3.632e+01	-1.929	0.053794	.
## meta_resolution_601x962	-4.193e+01	2.695e+01	-1.556	0.119793	
## meta_resolution_610x976	-5.217e+01	3.662e+01	-1.425	0.154315	
## meta_resolution_640x360	-3.655e+01	2.999e+01	-1.219	0.223054	
## meta_resolution_683x911	-6.948e+01	3.651e+01	-1.903	0.057143	.
## meta_resolution_712x1138	-6.521e+01	3.174e+01	-2.054	0.040013	*
## meta_resolution_732x549	-5.162e+01	4.099e+01	-1.259	0.207937	
## meta_resolution_747x420	-3.025e+01	3.688e+01	-0.820	0.412226	
## meta_resolution_768x1024	-4.741e+01	2.611e+01	-1.816	0.069492	.
## meta_resolution_780x360	-2.479e+01	3.653e+01	-0.679	0.497439	
## meta_resolution_800x1280	-4.864e+01	2.668e+01	-1.823	0.068391	.
## meta_resolution_810x1080	-5.204e+01	2.653e+01	-1.962	0.049849	*
## meta_resolution_820x615	-7.736e+01	3.206e+01	-2.413	0.015862	*
## meta_resolution_834x1112	-4.763e+01	2.658e+01	-1.792	0.073183	.
## meta_resolution_834x1194	-4.803e+01	2.760e+01	-1.740	0.081931	.
## meta_resolution_843x527	-8.041e+01	3.661e+01	-2.197	0.028107	*
## meta_resolution_848x477	-9.379e+00	3.723e+01	-0.252	0.801119	
## meta_resolution_854x534	-5.208e+01	3.664e+01	-1.422	0.155248	
## meta_resolution_878x494	-7.014e+01	3.667e+01	-1.912	0.055888	.
## meta_resolution_882x496	-4.922e+01	3.674e+01	-1.340	0.180424	
## meta_resolution_904x508	-4.919e+01	3.671e+01	-1.340	0.180367	
## meta_resolution_905x678	-6.832e+01	3.237e+01	-2.111	0.034850	*
## meta_resolution_960x600	-5.145e+01	3.671e+01	-1.401	0.161152	
## meta_resolution_962x601	-5.445e+01	2.840e+01	-1.917	0.055252	.
## meta_resolution_985x616	-7.008e+01	3.658e+01	-1.916	0.055448	.
## meta_resolution_998x562	-3.810e+01	3.669e+01	-1.038	0.299209	
## meta_resolution_1004x753	-4.942e+01	3.666e+01	-1.348	0.177663	
## meta_resolution_1011x569	-4.885e+01	3.665e+01	-1.333	0.182632	
## meta_resolution_1014x761	-7.169e+01	3.694e+01	-1.941	0.052349	.

## meta_resolution_1024x576	-1.184e+02	3.694e+01	-3.206	0.001359	**
## meta_resolution_1024x600	-4.572e+01	2.805e+01	-1.630	0.103159	
## meta_resolution_1024x614	-8.129e+01	3.669e+01	-2.216	0.026762	*
## meta_resolution_1024x640	-4.821e+01	2.852e+01	-1.691	0.090991	.
## meta_resolution_1024x683	-3.351e+01	3.672e+01	-0.913	0.361523	
## meta_resolution_1024x768	-4.979e+01	2.647e+01	-1.881	0.060063	.
## meta_resolution_1024x819	-6.595e+01	3.002e+01	-2.197	0.028066	*
## meta_resolution_1024x820	-6.014e+01	2.815e+01	-2.136	0.032725	*
## meta_resolution_1024x1366	-6.018e+01	2.854e+01	-2.109	0.035047	*
## meta_resolution_1033x620	-2.797e+01	3.673e+01	-0.761	0.446432	
## meta_resolution_1033x826	-1.201e+01	3.684e+01	-0.326	0.744466	
## meta_resolution_1050x590	-7.234e+01	3.188e+01	-2.269	0.023302	*
## meta_resolution_1066x666	-9.426e+01	3.671e+01	-2.568	0.010268	*
## meta_resolution_1067x600	-4.217e+01	2.800e+01	-1.506	0.132110	
## meta_resolution_1076x605	-8.622e+01	3.685e+01	-2.340	0.019343	*
## meta_resolution_1080x720	-5.941e+01	3.186e+01	-1.864	0.062349	.
## meta_resolution_1085x610	-5.235e+01	3.668e+01	-1.427	0.153586	
## meta_resolution_1088x612	-4.860e+01	3.188e+01	-1.525	0.127410	
## meta_resolution_1088x614	-7.234e+01	3.671e+01	-1.971	0.048838	*
## meta_resolution_1088x615	-2.407e+01	3.672e+01	-0.655	0.512231	
## meta_resolution_1092x614	-2.409e+01	3.667e+01	-0.657	0.511343	
## meta_resolution_1093x614	-5.618e+01	2.787e+01	-2.016	0.043873	*
## meta_resolution_1093x615	-4.949e+01	2.682e+01	-1.845	0.065126	.
## meta_resolution_1098x618	-4.297e+01	3.008e+01	-1.428	0.153281	
## meta_resolution_1102x620	-3.699e+01	3.665e+01	-1.009	0.312870	
## meta_resolution_1104x621	-4.664e+01	3.674e+01	-1.269	0.204363	
## meta_resolution_1111x625	-5.461e+01	3.674e+01	-1.486	0.137234	
## meta_resolution_1120x700	-4.650e+01	3.012e+01	-1.544	0.122642	
## meta_resolution_1129x635	-1.144e+02	3.668e+01	-3.119	0.001825	**
## meta_resolution_1133x907	-3.541e+01	3.669e+01	-0.965	0.334471	
## meta_resolution_1135x639	-2.080e+01	3.307e+01	-0.629	0.529417	
## meta_resolution_1139x640	-1.465e+01	3.692e+01	-0.397	0.691583	
## meta_resolution_1143x643	-6.897e+01	3.189e+01	-2.162	0.030652	*
## meta_resolution_1152x720	-5.584e+01	2.914e+01	-1.916	0.055456	.
## meta_resolution_1152x864	-8.066e+01	3.666e+01	-2.200	0.027840	*
## meta_resolution_1158x651	-1.932e+01	3.664e+01	-0.527	0.598031	
## meta_resolution_1164x655	-2.767e+01	3.666e+01	-0.755	0.450407	
## meta_resolution_1171x878	-3.327e+01	3.662e+01	-0.909	0.363644	
## meta_resolution_1181x664	-9.483e+01	3.670e+01	-2.584	0.009813	**
## meta_resolution_1182x665	-5.436e+01	3.195e+01	-1.701	0.088954	.
## meta_resolution_1182x667	-3.412e+01	3.676e+01	-0.928	0.353351	
## meta_resolution_1186x667	-3.345e+01	3.667e+01	-0.912	0.361632	
## meta_resolution_1187x667	-3.507e+01	3.667e+01	-0.956	0.338893	
## meta_resolution_1199x674	-7.067e+01	3.677e+01	-1.922	0.054664	.
## meta_resolution_1200x800	-3.989e+01	3.188e+01	-1.251	0.210934	
## meta_resolution_1204x677	-2.797e+01	3.190e+01	-0.877	0.380612	
## meta_resolution_1209x680	-7.626e+01	3.665e+01	-2.081	0.037507	*
## meta_resolution_1229x692	-5.528e+01	3.186e+01	-1.735	0.082833	.
## meta_resolution_1231x693	-3.079e+01	3.185e+01	-0.967	0.333751	
## meta_resolution_1235x823	-5.186e+01	3.668e+01	-1.414	0.157490	
## meta_resolution_1238x696	-3.122e+01	3.666e+01	-0.852	0.394527	
## meta_resolution_1241x698	-4.748e+01	3.005e+01	-1.580	0.114199	
## meta_resolution_1242x699	-2.085e+01	3.681e+01	-0.567	0.571037	
## meta_resolution_1254x705	-2.381e+01	3.668e+01	-0.649	0.516263	

## meta_resolution_1272x718	-4.913e+01	3.678e+01	-1.336	0.181728	
## meta_resolution_1280x720	-5.478e+01	2.617e+01	-2.093	0.036377	*
## meta_resolution_1280x768	-6.273e+01	2.766e+01	-2.268	0.023395	*
## meta_resolution_1280x800	-5.173e+01	2.620e+01	-1.974	0.048437	*
## meta_resolution_1280x854	-2.573e+01	3.676e+01	-0.700	0.484041	
## meta_resolution_1280x960	-5.767e+01	2.909e+01	-1.982	0.047504	*
## meta_resolution_1280x1024	-5.515e+01	2.625e+01	-2.100	0.035754	*
## meta_resolution_1300x731	-5.366e+01	2.694e+01	-1.992	0.046439	*
## meta_resolution_1312x738	-4.014e+01	3.679e+01	-1.091	0.275277	
## meta_resolution_1334x750	-8.743e+01	3.663e+01	-2.387	0.017043	*
## meta_resolution_1336x752	-7.798e+01	3.672e+01	-2.124	0.033747	*
## meta_resolution_1344x840	-5.088e+01	2.707e+01	-1.880	0.060243	.
## meta_resolution_1345x757	-7.846e+01	3.183e+01	-2.465	0.013742	*
## meta_resolution_1356x763	-6.364e+01	3.107e+01	-2.048	0.040613	*
## meta_resolution_1360x768	-4.887e+01	2.668e+01	-1.832	0.067049	.
## meta_resolution_1362x766	-4.644e+01	3.666e+01	-1.267	0.205351	
## meta_resolution_1364x768	4.097e+00	3.192e+01	0.128	0.897884	
## meta_resolution_1366x768	-4.956e+01	2.610e+01	-1.899	0.057596	.
## meta_resolution_1368x912	-6.075e+01	2.726e+01	-2.229	0.025885	*
## meta_resolution_1371x771	-5.377e+01	3.672e+01	-1.464	0.143209	
## meta_resolution_1372x858	-6.456e+01	3.669e+01	-1.760	0.078501	.
## meta_resolution_1384x865	1.169e+01	3.668e+01	0.319	0.750012	
## meta_resolution_1392x783	-4.450e+01	3.948e+01	-1.127	0.259696	
## meta_resolution_1396x785	-5.742e+01	2.917e+01	-1.968	0.049120	*
## meta_resolution_1397x786	-1.720e+01	3.678e+01	-0.468	0.640131	
## meta_resolution_1400x1050	-5.813e+01	3.683e+01	-1.578	0.114630	
## meta_resolution_1420x799	-8.466e-01	3.670e+01	-0.023	0.981595	
## meta_resolution_1423x800	-7.159e+01	3.671e+01	-1.950	0.051257	.
## meta_resolution_1440x900	-5.223e+01	2.616e+01	-1.997	0.045950	*
## meta_resolution_1440x960	-5.333e+01	3.685e+01	-1.447	0.147945	
## meta_resolution_1450x816	-6.717e+01	3.671e+01	-1.830	0.067386	.
## meta_resolution_1456x910	-6.313e+01	3.672e+01	-1.719	0.085661	.
## meta_resolution_1463x823	-7.413e+01	3.670e+01	-2.020	0.043446	*
## meta_resolution_1475x830	-5.945e+01	3.662e+01	-1.623	0.104582	
## meta_resolution_1477x831	-7.208e+01	3.183e+01	-2.264	0.023605	*
## meta_resolution_1499x843	-7.399e+01	3.669e+01	-2.017	0.043787	*
## meta_resolution_1500x844	-4.824e+01	3.666e+01	-1.316	0.188277	
## meta_resolution_1504x1003	-3.998e+01	3.005e+01	-1.330	0.183440	
## meta_resolution_1517x853	-5.176e+01	2.792e+01	-1.854	0.063850	.
## meta_resolution_1521x856	-9.064e+01	3.668e+01	-2.471	0.013515	*
## meta_resolution_1524x858	-6.159e+01	3.666e+01	-1.680	0.092997	.
## meta_resolution_1536x864	-5.356e+01	2.613e+01	-2.050	0.040427	*
## meta_resolution_1536x960	-5.840e+01	3.018e+01	-1.935	0.053011	.
## meta_resolution_1561x879	-7.256e+01	3.667e+01	-1.978	0.047948	*
## meta_resolution_1587x893	-4.482e+01	3.183e+01	-1.408	0.159125	
## meta_resolution_1600x900	-4.992e+01	2.613e+01	-1.910	0.056190	.
## meta_resolution_1600x1200	-5.244e+01	3.191e+01	-1.643	0.100463	
## meta_resolution_1614x908	-7.287e+01	3.194e+01	-2.282	0.022567	*
## meta_resolution_1616x909	-6.115e+01	3.674e+01	-1.664	0.096100	.
## meta_resolution_1620x1080	-3.788e+01	3.682e+01	-1.029	0.303711	
## meta_resolution_1676x943	-5.942e+01	3.006e+01	-1.977	0.048122	*
## meta_resolution_1680x945	-5.517e+01	3.008e+01	-1.834	0.066663	.
## meta_resolution_1680x1050	-5.279e+01	2.630e+01	-2.007	0.044772	*
## meta_resolution_1685x948	-6.432e+01	3.182e+01	-2.021	0.043346	*

```

## meta_resolution_1707x960      -7.750e+01  3.665e+01  -2.115  0.034511 *
## meta_resolution_1728x972      -5.497e+01  3.689e+01  -1.490  0.136273
## meta_resolution_1739x979      -6.656e+01  3.664e+01  -1.817  0.069332 .
## meta_resolution_1746x982      -1.891e+01  3.189e+01  -0.593  0.553237
## meta_resolution_1792x1120     -2.108e+01  3.689e+01  -0.572  0.567695
## meta_resolution_1812x1019     -8.121e+01  3.667e+01  -2.215  0.026849 *
## meta_resolution_1829x1029     -7.031e+01  3.665e+01  -1.919  0.055121 .
## meta_resolution_1847x1154     -7.966e+01  3.674e+01  -2.168  0.030220 *
## meta_resolution_1920x1080     -5.127e+01  2.611e+01  -1.964  0.049656 *
## meta_resolution_1920x1126     -4.630e+01  3.680e+01  -1.258  0.208457
## meta_resolution_1920x1200     -5.420e+01  2.668e+01  -2.032  0.042253 *
## meta_resolution_2048x864      -4.342e+01  3.008e+01  -1.443  0.148978
## meta_resolution_2048x1080     -7.265e+01  3.666e+01  -1.982  0.047594 *
## meta_resolution_2048x1152     -5.690e+01  2.734e+01  -2.081  0.037490 *
## meta_resolution_2048x1280     -4.210e+01  3.675e+01  -1.146  0.252070
## meta_resolution_2195x1235     -7.745e+01  3.189e+01  -2.428  0.015212 *
## meta_resolution_2560x1080     -5.101e+01  3.002e+01  -1.699  0.089340 .
## meta_resolution_2560x1440     -4.135e+01  2.674e+01  -1.547  0.122034
## meta_resolution_2752x1152     -9.321e+01  3.695e+01  -2.523  0.011682 *
## meta_resolution_3440x1440     -4.571e+01  3.673e+01  -1.245  0.213313
## meta_resolution_3840x2160     -6.828e+01  3.673e+01  -1.859  0.063122 .
## meta_screenres_S              NA          NA          NA          NA
## meta_screenres_M              NA          NA          NA          NA
## meta_screenres_L              NA          NA          NA          NA
## age_65_1                      -4.313e-01  5.602e+00  -0.077  0.938645
## PID_Democrat                  3.342e+01  1.002e+00  33.360  < 2e-16 ***
## PID_Independent                1.255e+01  1.428e+00   8.790  < 2e-16 ***
## PID_Republican                 NA          NA          NA          NA
## treat_video                    2.829e+00  1.537e+00   1.841  0.065678 .
## treat_audio                    4.362e+00  1.531e+00   2.849  0.004407 **
## treat_text                     3.720e+00  1.519e+00   2.449  0.014383 *
## treat_skit                     NA          NA          NA          NA
## treat_ad                       NA          NA          NA          NA
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 25.52 on 3772 degrees of freedom
## Multiple R-squared:  0.4156, Adjusted R-squared:  0.3611
## F-statistic: 7.621 on 352 and 3772 DF,  p-value: < 2.2e-16

```

$$Pr(\theta|y) = \frac{Pr(y|\theta)Pr(\theta)}{Pr(y)} \quad (1)$$

Equation (1) seems useful, eh?

Here's a dumb example of how to use some references: In paper we run our analysis in R (R Core Team 2020). We also use the `tidyverse` which was written by Wickham et al. (2019) If we were interested in baseball data then Friendly et al. (2020) could be useful.

We can use maths by including latex between dollar signs, for instance θ .

4 Results

5 Discussion

5.1 First discussion point

5.2 Second discussion point

5.3 Third discussion point

5.4 Weaknesses and next steps

A Appendix

A.1 missing value

```
## Loading required package: colorspace
```

```
## Loading required package: grid
```

```
## VIM is ready to use.
```

```
## Suggestions and bug-reports can be submitted at: https://github.com/statistikat/VIM/issues
```

```
##
```

```
## Attaching package: 'VIM'
```

```
## The following object is masked from 'package:datasets':
```

```
##
```

```
##     sleep
```

```
## Warning in plot.aggr(res, ...): not enough vertical space to display frequencies
```

```
## (too many combinations)
```

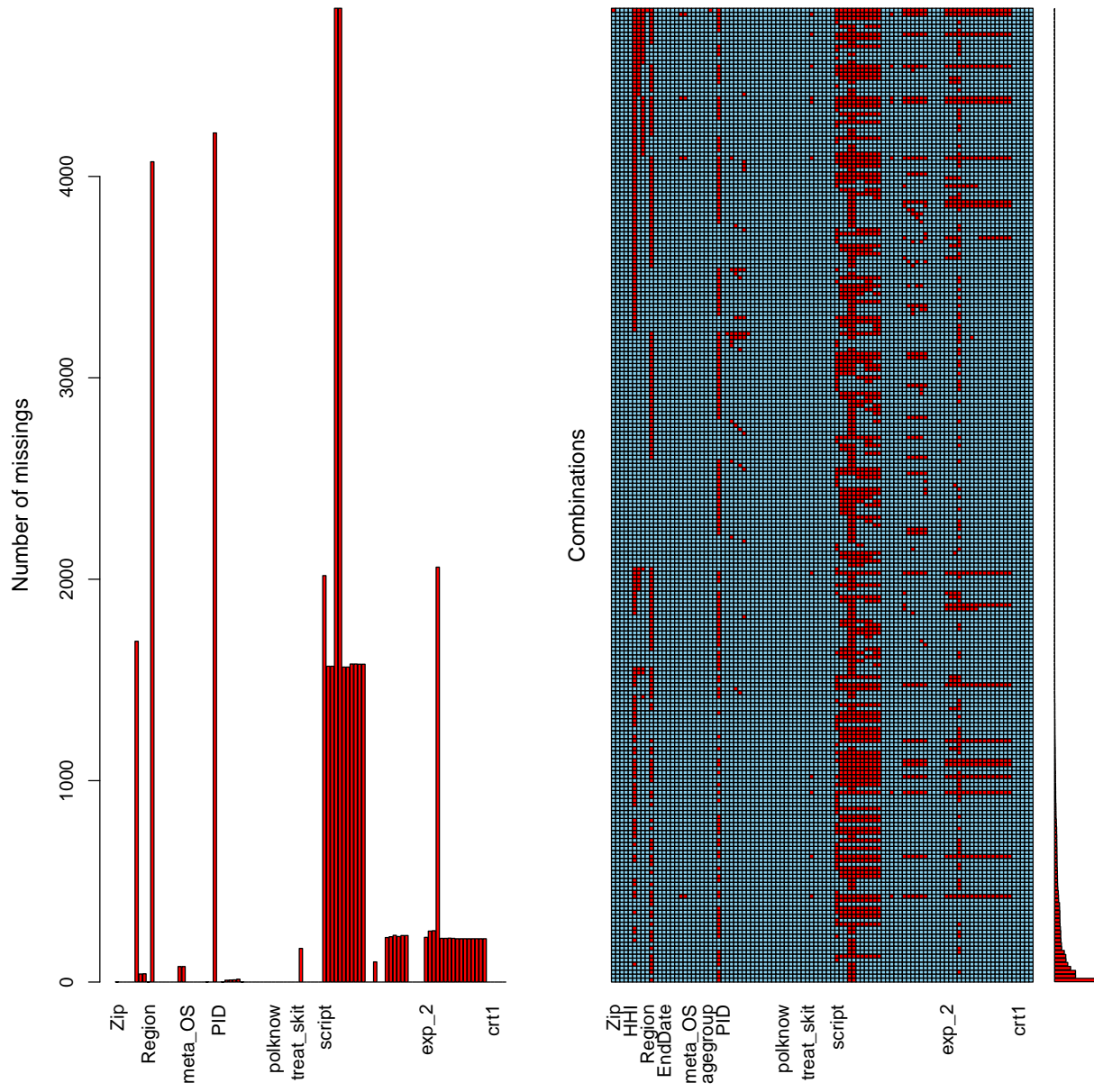


Figure 6: Missing value Visualization

References

- Friendly, Michael, Chris Dalzell, Martin Monkman, and Dennis Murphy. 2020. *Lahman: Sean “Lahman” Baseball Database*. <https://CRAN.R-project.org/package=Lahman>.
- R Core Team. 2020. *R: A Language and Environment for Statistical Computing*. Vienna, Austria: R Foundation for Statistical Computing. <https://www.R-project.org/>.
- Wickham, Hadley, Mara Averick, Jennifer Bryan, Winston Chang, Lucy D’Agostino McGowan, Romain François, Garrett Golemund, et al. 2019. “Welcome to the tidyverse.” *Journal of Open Source Software* 4 (43): 1686. <https://doi.org/10.21105/joss.01686>.