

```

library(tidyverse)

## -- Attaching packages ----- tidyverse 1.3.1 --

## v ggplot2 3.3.5     v purrr    0.3.4
## v tibble   3.1.6     v dplyr    1.0.7
## v tidyr    1.1.4     v stringr  1.4.0
## v readr    2.1.0     v forcats  0.5.1

## -- Conflicts ----- tidyverse_conflicts() --
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()   masks stats::lag()

library(caret)

## Loading required package: lattice

##
## Attaching package: 'caret'

## The following object is masked from 'package:purrr':
##      lift

df <- read_csv("df.csv")

## Rows: 114660 Columns: 15

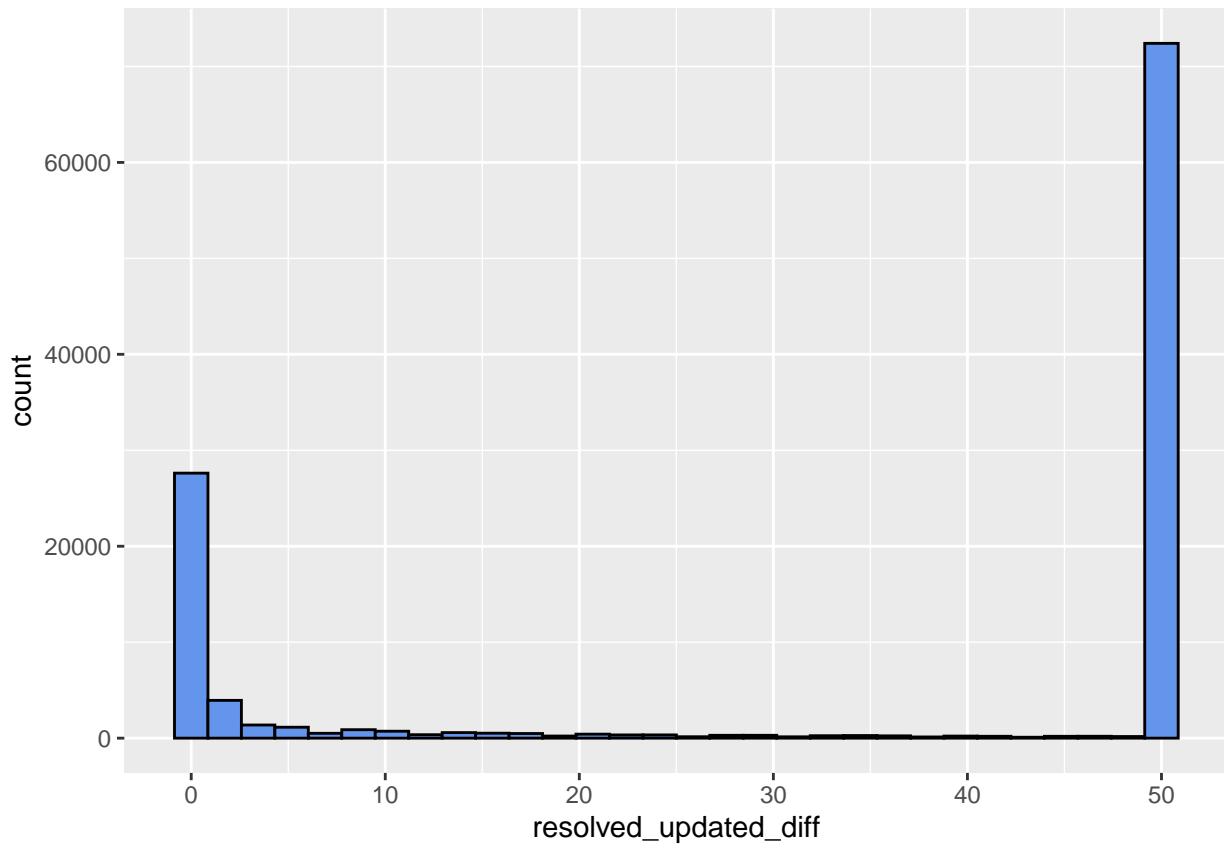
## -- Column specification --
## Delimiter: ","
## chr (9): number, incident_state, sys_updated_by, contact_type, category, sub...
## dbl (5): reassignment_count, reopen_count, sys_mod_count, problem_id, resolv...
## lgl (1): made_sla

##
## i Use 'spec()' to retrieve the full column specification for this data.
## i Specify the column types or set 'show_col_types = FALSE' to quiet this message.

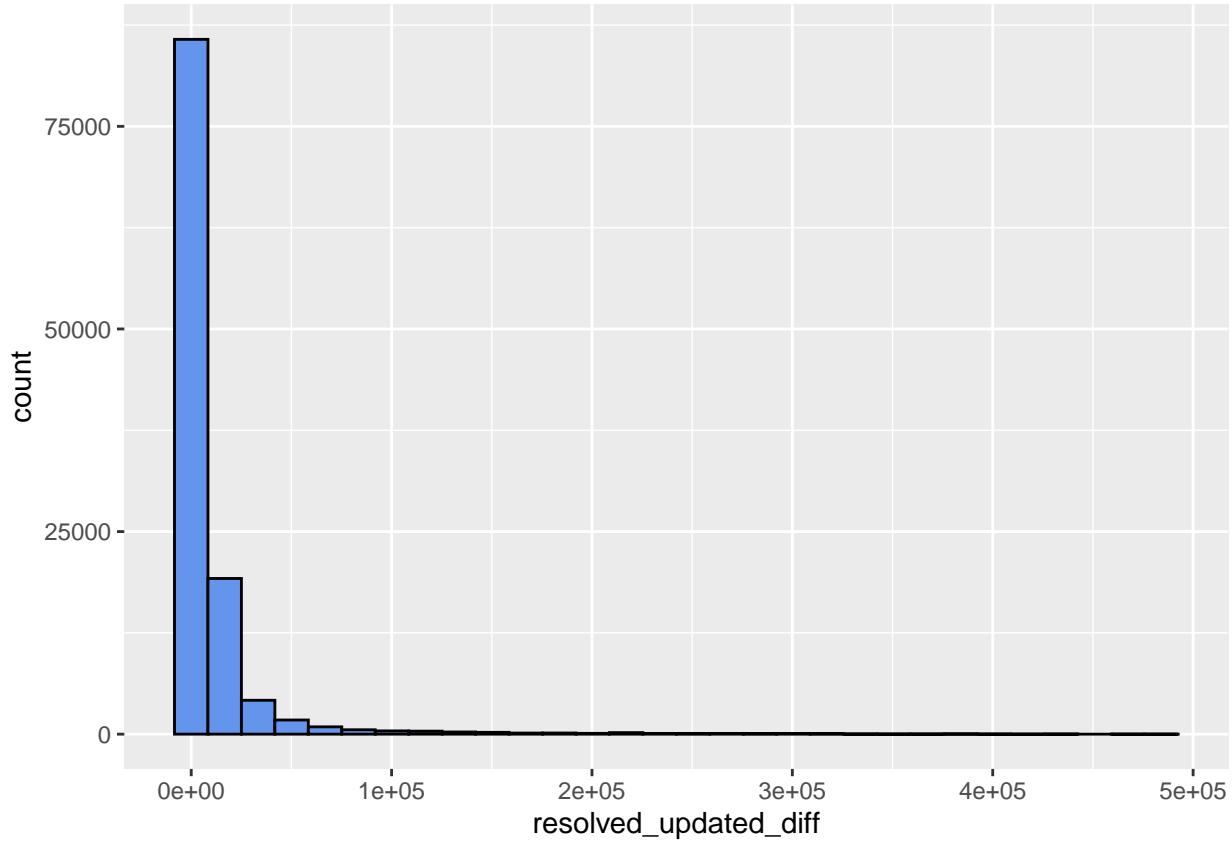
attach(df)

df %>%
  mutate(resolved_updated_diff= ifelse(resolved_updated_diff > 50, 50, resolved_updated_diff)) %>%
  ggplot(aes(resolved_updated_diff)) +
  geom_histogram(bins = 30, col = "black", fill = "cornflowerblue")

```



```
df %>%
  ggplot(aes(resolved_updated_diff)) +
  geom_histogram(bins = 30, col = "black", fill = "cornflowerblue")
```



```

df %>% filter(resolved_updated_diff > 100000)

## # A tibble: 2,178 x 15
##   number incident_state reassignment_co~ reopen_count sys_mod_count made_sla
##   <chr>   <chr>           <dbl>        <dbl>        <dbl> <lgl>
## 1 INC0000~ Active          0            0            0 TRUE
## 2 INC0000~ Awaiting User ~ 0            0            1 TRUE
## 3 INC0000~ Active          0            0            0 TRUE
## 4 INC0000~ Awaiting User ~ 0            0            1 TRUE
## 5 INC0000~ Active          0            0            0 TRUE
## 6 INC0000~ Active          0            0            7 TRUE
## 7 INC0000~ Awaiting User ~ 0            0            8 TRUE
## 8 INC0000~ Awaiting User ~ 0            0            0 TRUE
## 9 INC0000~ Awaiting User ~ 0            0            0 TRUE
## 10 INC0000~ Active         0            0            7 TRUE
## # ... with 2,168 more rows, and 9 more variables: sys_updated_by <chr>,
## #   contact_type <chr>, category <chr>, subcategory <chr>, problem_id <dbl>,
## #   urgency <chr>, impact <chr>, priority <chr>, resolved_updated_diff <dbl>

df %>% filter(number == 'INC0000341') %>% select(number, incident_state, resolved_updated_diff)

## # A tibble: 7 x 3
##   number incident_state resolved_updated_diff
##   <chr>   <chr>           <dbl>
## 1 INC0000341 Active          100000

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## 1 INC0000341 Awaiting User Info          223160
## 2 INC0000341 Active                     193115
## 3 INC0000341 Active                     193104
## 4 INC0000341 Active                     193104
## 5 INC0000341 Awaiting User Info          193024
## 6 INC0000341 Awaiting User Info          0
## 7 INC0000341 Resolved                   0

```

The one observation where resolution time is less than zero will be considered an outlier. Observations with high resolution time of more than 4 months do not seem like outliers.

```
df <- df %>% filter(resolved_updated_diff >= 0)
```

```

dfm = subset(df, select=-c(sys_updated_by))
train_idx = createDataPartition(dfm$resolved_updated_diff, p = 0.8, list=F)
df_train = dfm[train_idx,]
df_test = dfm[-train_idx,]

```

```

lm_full_data <- lm(resolved_updated_diff ~ incident_state + reassignment_count + reopen_count + made_sla
summary(lm_full_data)

```

```

##
## Call:
## lm(formula = resolved_updated_diff ~ incident_state + reassignment_count +
##     reopen_count + made_sla + reopen_count + category + subcategory +
##     problem_id + impact + urgency + priority, data = df_train)
##
## Residuals:
##      Min        1Q    Median        3Q       Max
## -122568   -8396   -4299    2592   460168
##
## Coefficients: (6 not defined because of singularities)
##                               Estimate Std. Error t value Pr(>|t|)
## (Intercept)                 649.83    20461.01   0.032 0.974664
## incident_stateAwaiting Evidence 14762.18    5086.52   2.902 0.003706 ***
## incident_stateAwaiting Problem 17885.77    1440.67  12.415 < 2e-16 ***
## incident_stateAwaiting User Info 1819.22    296.43   6.137 8.44e-10 ***
## incident_stateAwaiting Vendor 16126.46   1231.31  13.097 < 2e-16 ***
## incident_stateNew           1633.04    228.31   7.153 8.57e-13 ***
## incident_stateResolved      -9972.52    250.66 -39.785 < 2e-16 ***
## reassignment_count          168.36     53.75   3.133 0.001734 **
## reopen_count                 480.44    458.36   1.048 0.294555
## made_slaTRUE                14127.67   13736.33   1.028 0.303723
## categoryCategory 12         -8361.09   30885.27  -0.271 0.786611
## categoryCategory 13         12649.04   11025.01   1.147 0.251259
## categoryCategory 14         -11615.55   24324.57  -0.478 0.632991
## categoryCategory 15         7808.01    18951.20   0.412 0.680336
## categoryCategory 16         -14031.37   24324.53  -0.577 0.564049
## categoryCategory 17         16095.55   10959.23   1.469 0.141924
## categoryCategory 19         17625.06   10962.05   1.608 0.107877
## categoryCategory 2          -15943.63   16887.94  -0.944 0.345129
## categoryCategory 20         13390.06   10818.91   1.238 0.215848

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## categoryCategory 21      -13616.58    11140.14   -1.222 0.221598
## categoryCategory 22      13089.70    12971.59   1.009 0.312927
## categoryCategory 23      16425.43    10804.17   1.520 0.128443
## categoryCategory 24      21357.27    10806.38   1.976 0.048117 *
## categoryCategory 25      7252.23     8747.23   0.829 0.407056
## categoryCategory 26      12564.91    10805.61   1.163 0.244908
## categoryCategory 27      6817.14     21878.50   0.312 0.755352
## categoryCategory 28      14921.63    10815.48   1.380 0.167696
## categoryCategory 29      2759.12     11088.45   0.249 0.803494
## categoryCategory 30      12634.46    13634.08   0.927 0.354094
## categoryCategory 31      -2569.13     9066.56   -0.283 0.776899
## categoryCategory 32      13446.14    10817.29   1.243 0.213863
## categoryCategory 33      18914.21    10593.45   1.785 0.074190 .
## categoryCategory 34      56333.03    10838.82   5.197 2.03e-07 ***
## categoryCategory 35      11521.56    11035.32   1.044 0.296460
## categoryCategory 37      19707.10    10831.81   1.819 0.068858 .
## categoryCategory 38      16172.53    11071.42   1.461 0.144088
## categoryCategory 4       -9753.69     18312.94   -0.533 0.594304
## categoryCategory 40      13685.16     10911.18   1.254 0.209761
## categoryCategory 41      -8415.18     14424.20   -0.583 0.559621
## categoryCategory 42      20105.17    10800.00   1.862 0.062664 .
## categoryCategory 43      12865.15    11040.67   1.165 0.243920
## categoryCategory 44      11475.40     10832.64   1.059 0.289450
## categoryCategory 45      26079.07    10803.79   2.414 0.015786 *
## categoryCategory 46      19450.97    10798.43   1.801 0.071663 .
## categoryCategory 47      21595.40     11625.48   1.858 0.063230 .
## categoryCategory 48      15604.79     16318.14   0.956 0.338931
## categoryCategory 5       -12073.30    11683.47   -1.033 0.301436
## categoryCategory 50      -11134.82    12800.09   -0.870 0.384356
## categoryCategory 51      12481.73     10827.08   1.153 0.248985
## categoryCategory 52      -10190.82    13581.03   -0.750 0.453033
## categoryCategory 53      14661.28     10797.38   1.358 0.174513
## categoryCategory 54      -4984.49     10320.72   -0.483 0.629125
## categoryCategory 55      24505.07     10891.60   2.250 0.024457 *
## categoryCategory 56      -12380.43    11044.36   -1.121 0.262302
## categoryCategory 57      14201.84     10825.51   1.312 0.189561
## categoryCategory 58      -16927.75    20263.26   -0.835 0.403499
## categoryCategory 59      2050.62      21356.47   0.096 0.923506
## categoryCategory 6       -11834.12    21356.44   -0.554 0.579495
## categoryCategory 61      18964.65     10832.34   1.751 0.079993 .
## categoryCategory 62      7779.48      18943.56   0.411 0.681318
## categoryCategory 63      9762.53      12170.70   0.802 0.422477
## categoryCategory 7       18518.71     11123.94   1.665 0.095964 .
## categoryCategory 8       14558.10     11408.01   1.276 0.201913
## categoryCategory 9       15856.78     10803.57   1.468 0.142180
## categoryNone            -489.25      15605.88   -0.031 0.974990
## subcategorySubcategory 10 -3236.07     13672.19   -0.237 0.812898
## subcategorySubcategory 100 -23366.83    14979.03   -1.560 0.118771
## subcategorySubcategory 101 -19396.07    12421.44   -1.561 0.118410
## subcategorySubcategory 102 -22012.79    13687.53   -1.608 0.107787
## subcategorySubcategory 103 -27325.62    12044.85   -2.269 0.023292 *
## subcategorySubcategory 104 -3262.99     15693.10   -0.208 0.835288
## subcategorySubcategory 105 -23762.19    12390.00   -1.918 0.055133 .
## subcategorySubcategory 106 -27477.36    12238.83   -2.245 0.024764 *

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## subcategorySubcategory 107      -16988.32   12279.31  -1.383 0.166518
## subcategorySubcategory 109      -24910.33   13151.89  -1.894 0.058222 .
## subcategorySubcategory 11       -27196.12   15007.51  -1.812 0.069964 .
## subcategorySubcategory 110      -28108.39   12178.28  -2.308 0.020997 *
## subcategorySubcategory 111      -21226.71   14854.51  -1.429 0.153015
## subcategorySubcategory 112      -38457.90   12112.56  -3.175 0.001499 **
## subcategorySubcategory 113      -15290.72   12348.23  -1.238 0.215611
## subcategorySubcategory 114      -22329.02   12022.85  -1.857 0.063284 .
## subcategorySubcategory 115      32011.83    13856.73  2.310 0.020879 *
## subcategorySubcategory 116      -28069.40   22495.57  -1.248 0.212117
## subcategorySubcategory 117      -29830.15   12077.67  -2.470 0.013518 *
## subcategorySubcategory 118      -28686.36   12607.48  -2.275 0.022888 *
## subcategorySubcategory 119      -2449.61    16068.28  -0.152 0.878832
## subcategorySubcategory 12       -32342.00   14251.21  -2.269 0.023245 *
## subcategorySubcategory 120      -29570.35   12509.62  -2.364 0.018090 *
## subcategorySubcategory 122      -21257.26   15775.16  -1.348 0.177818
## subcategorySubcategory 123      -28692.52   12056.77  -2.380 0.017325 *
## subcategorySubcategory 124      -32866.16   29508.44  -1.114 0.265373
## subcategorySubcategory 125      -26836.72   12037.30  -2.229 0.025786 *
## subcategorySubcategory 126      -1985.18    14353.59  -0.138 0.889999
## subcategorySubcategory 127      -25241.24   12149.97  -2.077 0.037761 *
## subcategorySubcategory 128      -9070.37    22584.62  -0.402 0.687967
## subcategorySubcategory 129      -948.37     14435.64  -0.066 0.947620
## subcategorySubcategory 13       -30727.55   12253.61  -2.508 0.012156 *
## subcategorySubcategory 130      -26095.88   12118.70  -2.153 0.031293 *
## subcategorySubcategory 131      -2129.00    24569.88  -0.087 0.930949
## subcategorySubcategory 132      -24043.13   12482.21  -1.926 0.054084 .
## subcategorySubcategory 134      -21668.10   12092.42  -1.792 0.073156 .
## subcategorySubcategory 135      -27759.66   12037.65  -2.306 0.021109 *
## subcategorySubcategory 136          NA         NA        NA        NA
## subcategorySubcategory 138      -18965.39   13452.75  -1.410 0.158609
## subcategorySubcategory 14       -17570.40   27189.36  -0.646 0.518136
## subcategorySubcategory 140      -31928.84   16991.98  -1.879 0.060240 .
## subcategorySubcategory 141      -22392.45   29481.70  -0.760 0.447533
## subcategorySubcategory 142      -24042.50   13863.65  -1.734 0.082884 .
## subcategorySubcategory 144      -34777.35   12990.03  -2.677 0.007425 **
## subcategorySubcategory 145      -22858.45   12126.68  -1.885 0.059437 .
## subcategorySubcategory 146      -24061.64   12135.98  -1.983 0.047407 *
## subcategorySubcategory 149      -43874.03   19691.81  -2.228 0.025881 *
## subcategorySubcategory 150      -18418.37   12015.99  -1.533 0.125324
## subcategorySubcategory 151      -69804.77   12224.54  -5.710 1.13e-08 ***
## subcategorySubcategory 152      -27091.44   16041.79  -1.689 0.091260 .
## subcategorySubcategory 153      -17912.88   12095.08  -1.481 0.138609
## subcategorySubcategory 154          60.88    12065.82  0.005 0.995974
## subcategorySubcategory 155      -29967.13   14811.63  -2.023 0.043054 *
## subcategorySubcategory 156      -28461.23   13918.83  -2.045 0.040877 *
## subcategorySubcategory 157      -23876.76   22877.47  -1.044 0.296636
## subcategorySubcategory 158      -17263.63   14636.32  -1.180 0.238200
## subcategorySubcategory 159      -26211.26   12177.47  -2.152 0.031365 *
## subcategorySubcategory 16       -26097.33   12083.79  -2.160 0.030799 *
## subcategorySubcategory 160      -7551.21    29647.86  -0.255 0.798958
## subcategorySubcategory 161      -38718.34   13840.70  -2.797 0.005152 **
## subcategorySubcategory 162      -63811.14   12838.94  -4.970 6.70e-07 ***
## subcategorySubcategory 163      -16343.14   12189.99  -1.341 0.180021

```

## subcategorySubcategory 164	-25520.45	11999.67	-2.127	0.033443 *
## subcategorySubcategory 165	NA	NA	NA	NA
## subcategorySubcategory 166	-29924.34	13523.69	-2.213	0.026918 *
## subcategorySubcategory 167	-23810.59	12640.15	-1.884	0.059605 .
## subcategorySubcategory 168	-25607.45	12062.06	-2.123	0.033759 *
## subcategorySubcategory 169	-18823.63	14706.98	-1.280	0.200580
## subcategorySubcategory 17	-34221.84	13280.62	-2.577	0.009973 **
## subcategorySubcategory 170	-24547.75	12044.17	-2.038	0.041538 *
## subcategorySubcategory 171	20732.46	12624.83	1.642	0.100552
## subcategorySubcategory 172	-17199.77	12994.20	-1.324	0.185623
## subcategorySubcategory 173	-23274.30	19629.45	-1.186	0.235751
## subcategorySubcategory 174	-25141.42	11987.76	-2.097	0.035974 *
## subcategorySubcategory 175	-24438.50	12005.30	-2.036	0.041789 *
## subcategorySubcategory 176	-5024.61	15376.56	-0.327	0.743842
## subcategorySubcategory 177	-2243.75	11643.90	-0.193	0.847197
## subcategorySubcategory 178	-27299.41	12232.60	-2.232	0.025638 *
## subcategorySubcategory 18	-29551.02	14977.80	-1.973	0.048500 *
## subcategorySubcategory 181	-45789.45	12359.73	-3.705	0.000212 ***
## subcategorySubcategory 182	-22983.28	12310.43	-1.867	0.061908 .
## subcategorySubcategory 183	-33006.05	12126.12	-2.722	0.006492 **
## subcategorySubcategory 184	-27768.34	12141.70	-2.287	0.022197 *
## subcategorySubcategory 185	-29208.28	12089.72	-2.416	0.015696 *
## subcategorySubcategory 186	5216.25	15066.70	0.346	0.729185
## subcategorySubcategory 187	-25429.91	19629.60	-1.295	0.195155
## subcategorySubcategory 188	47827.74	19652.80	2.434	0.014950 *
## subcategorySubcategory 189	-32786.51	12292.58	-2.667	0.007650 **
## subcategorySubcategory 191	-19511.51	12123.80	-1.609	0.107542
## subcategorySubcategory 192	-18944.04	21130.39	-0.897	0.369972
## subcategorySubcategory 193	-3367.89	16592.04	-0.203	0.839149
## subcategorySubcategory 194	-29869.20	12783.93	-2.336	0.019469 *
## subcategorySubcategory 195	-11124.39	16388.98	-0.679	0.497284
## subcategorySubcategory 196	-38918.92	18097.17	-2.151	0.031514 *
## subcategorySubcategory 197	-48259.63	12964.52	-3.722	0.000197 ***
## subcategorySubcategory 198	-28359.86	12484.07	-2.272	0.023108 *
## subcategorySubcategory 199	-32786.45	13493.15	-2.430	0.015107 *
## subcategorySubcategory 2	-27563.87	17783.59	-1.550	0.121154
## subcategorySubcategory 20	-23523.40	12264.99	-1.918	0.055123 .
## subcategorySubcategory 200	-31713.16	12055.38	-2.631	0.008524 **
## subcategorySubcategory 202	-20712.30	12066.56	-1.717	0.086073 .
## subcategorySubcategory 203	-21910.51	14957.26	-1.465	0.142958
## subcategorySubcategory 204	-29836.15	22498.76	-1.326	0.184802
## subcategorySubcategory 205	-67313.69	13522.07	-4.978	6.43e-07 ***
## subcategorySubcategory 207	79403.22	13989.96	5.676	1.39e-08 ***
## subcategorySubcategory 208	-23182.77	12283.00	-1.887	0.059112 .
## subcategorySubcategory 209	-28655.62	13835.11	-2.071	0.038341 *
## subcategorySubcategory 210	-13127.12	23151.85	-0.567	0.570715
## subcategorySubcategory 211	-22562.93	29482.16	-0.765	0.444090
## subcategorySubcategory 212	-36003.78	16992.13	-2.119	0.034106 *
## subcategorySubcategory 213	-25555.53	15311.21	-1.669	0.095106 .
## subcategorySubcategory 215	-26135.72	12207.33	-2.141	0.032278 *
## subcategorySubcategory 216	-28734.49	15361.41	-1.871	0.061409 .
## subcategorySubcategory 217	-26131.90	14742.36	-1.773	0.076303 .
## subcategorySubcategory 218	-24906.20	12444.22	-2.001	0.045349 *
## subcategorySubcategory 219	-23448.75	12727.29	-1.842	0.065420 .

## subcategorySubcategory 22	-5724.36	18321.23	-0.312	0.754704
## subcategorySubcategory 220	-9972.86	12056.88	-0.827	0.408154
## subcategorySubcategory 222	-11276.84	15111.52	-0.746	0.455524
## subcategorySubcategory 223	-30562.61	11994.98	-2.548	0.010837 *
## subcategorySubcategory 224	-31365.62	12085.34	-2.595	0.009451 **
## subcategorySubcategory 225	-3549.73	13419.02	-0.265	0.791372
## subcategorySubcategory 226	-31618.74	13752.05	-2.299	0.021496 *
## subcategorySubcategory 227	-21933.20	16313.16	-1.345	0.178787
## subcategorySubcategory 228	-34189.73	12179.41	-2.807	0.004999 **
## subcategorySubcategory 229	-25663.36	12086.63	-2.123	0.033733 *
## subcategorySubcategory 23	-26544.50	12711.52	-2.088	0.036780 *
## subcategorySubcategory 230	1495.48	13067.77	0.114	0.908889
## subcategorySubcategory 231	-17239.08	12048.56	-1.431	0.152491
## subcategorySubcategory 232	-23348.25	13659.14	-1.709	0.087390 .
## subcategorySubcategory 233	-28083.50	12273.09	-2.288	0.022127 *
## subcategorySubcategory 234	57969.34	18029.07	3.215	0.001303 **
## subcategorySubcategory 235	1975.09	13302.65	0.148	0.881970
## subcategorySubcategory 236	-45793.72	29468.00	-1.554	0.120184
## subcategorySubcategory 237	-33660.38	15313.36	-2.198	0.027944 *
## subcategorySubcategory 24	-4183.76	18321.17	-0.228	0.819369
## subcategorySubcategory 240	3109.87	13107.67	0.237	0.812459
## subcategorySubcategory 241	-44647.72	29468.00	-1.515	0.129744
## subcategorySubcategory 242	-24648.92	12262.81	-2.010	0.044428 *
## subcategorySubcategory 243	-26738.06	12283.49	-2.177	0.029502 *
## subcategorySubcategory 244	-32240.91	12903.02	-2.499	0.012466 *
## subcategorySubcategory 245	-10996.51	12877.57	-0.854	0.393148
## subcategorySubcategory 246	-23932.43	12709.95	-1.883	0.059708 .
## subcategorySubcategory 247	-20365.31	12227.96	-1.665	0.095822 .
## subcategorySubcategory 248	-22549.29	12110.35	-1.862	0.062608 .
## subcategorySubcategory 249	-12669.24	12167.36	-1.041	0.297763
## subcategorySubcategory 25	-25397.91	12224.17	-2.078	0.037742 *
## subcategorySubcategory 250	-28207.10	12286.78	-2.296	0.021694 *
## subcategorySubcategory 251	-24930.13	12036.28	-2.071	0.038338 *
## subcategorySubcategory 252	-10480.17	12270.54	-0.854	0.393056
## subcategorySubcategory 253	-39710.62	12936.99	-3.070	0.002145 **
## subcategorySubcategory 254	-28217.45	12690.34	-2.224	0.026182 *
## subcategorySubcategory 255	-23167.97	12080.38	-1.918	0.055137 .
## subcategorySubcategory 256	-32642.71	13103.94	-2.491	0.012738 *
## subcategorySubcategory 257	-5748.12	12423.73	-0.463	0.643600
## subcategorySubcategory 258	-30813.20	12258.19	-2.514	0.011949 *
## subcategorySubcategory 259	-29295.39	12101.75	-2.421	0.015490 *
## subcategorySubcategory 260	-13095.33	12412.06	-1.055	0.291406
## subcategorySubcategory 261	-16940.76	12340.05	-1.373	0.169809
## subcategorySubcategory 262	-33397.04	13658.35	-2.445	0.014480 *
## subcategorySubcategory 264	82328.28	29468.00	2.794	0.005210 **
## subcategorySubcategory 269	-27375.96	13027.90	-2.101	0.035614 *
## subcategorySubcategory 270	-22179.65	12150.38	-1.825	0.067940 .
## subcategorySubcategory 271	-26917.12	12143.51	-2.217	0.026654 *
## subcategorySubcategory 273	-16429.24	13784.89	-1.192	0.233331
## subcategorySubcategory 274	-32379.57	18027.62	-1.796	0.072481 .
## subcategorySubcategory 275	-24132.87	12013.47	-2.009	0.044559 *
## subcategorySubcategory 276	-8348.65	21420.94	-0.390	0.696728
## subcategorySubcategory 277	-18110.65	14125.40	-1.282	0.199799
## subcategorySubcategory 279	-22661.43	15540.26	-1.458	0.144778

## subcategorySubcategory 28	-25430.08	12241.51	-2.077	0.037771	*
## subcategorySubcategory 280	NA	NA	NA	NA	
## subcategorySubcategory 281	-25454.69	12906.09	-1.972	0.048578	*
## subcategorySubcategory 282	5760.58	21045.75	0.274	0.784303	
## subcategorySubcategory 283	-13704.58	12931.69	-1.060	0.289253	
## subcategorySubcategory 284	114487.49	29534.54	3.876	0.000106	***
## subcategorySubcategory 285	-31692.97	12279.25	-2.581	0.009852	**
## subcategorySubcategory 287	-28998.92	13357.17	-2.171	0.029931	*
## subcategorySubcategory 288	-24318.76	15340.23	-1.585	0.112903	
## subcategorySubcategory 289	-25663.50	12303.71	-2.086	0.036996	*
## subcategorySubcategory 29	-28639.54	12036.15	-2.379	0.017340	*
## subcategorySubcategory 291	-27253.09	14237.18	-1.914	0.055595	.
## subcategorySubcategory 292	-16185.05	15026.92	-1.077	0.281451	
## subcategorySubcategory 294	-5640.23	12617.25	-0.447	0.654858	
## subcategorySubcategory 295	-19807.89	15298.03	-1.295	0.195393	
## subcategorySubcategory 296	-25363.08	13906.11	-1.824	0.068173	.
## subcategorySubcategory 298	-30820.27	18026.32	-1.710	0.087318	.
## subcategorySubcategory 299	-35568.13	13323.63	-2.670	0.007597	**
## subcategorySubcategory 3	-27521.34	12024.17	-2.289	0.022091	*
## subcategorySubcategory 30	-13325.34	12335.01	-1.080	0.280018	
## subcategorySubcategory 300	-26595.22	12058.08	-2.206	0.027415	*
## subcategorySubcategory 301	-20511.99	12229.88	-1.677	0.093506	.
## subcategorySubcategory 302	-26400.02	12263.24	-2.153	0.031339	*
## subcategorySubcategory 303	-27228.64	12022.20	-2.265	0.023523	*
## subcategorySubcategory 304	-8729.95	18137.09	-0.481	0.630282	
## subcategorySubcategory 305	41016.36	12170.74	3.370	0.000752	***
## subcategorySubcategory 31	-23388.49	12041.97	-1.942	0.052110	.
## subcategorySubcategory 32	-18801.69	15804.33	-1.190	0.234185	
## subcategorySubcategory 33	-29934.46	13602.06	-2.201	0.027758	*
## subcategorySubcategory 34	-29789.94	13146.59	-2.266	0.023455	*
## subcategorySubcategory 35	-34805.22	19635.14	-1.773	0.076299	.
## subcategorySubcategory 36	-29738.49	12039.98	-2.470	0.013514	*
## subcategorySubcategory 37	-26855.51	14811.51	-1.813	0.069812	.
## subcategorySubcategory 4	-22734.95	12433.57	-1.829	0.067476	.
## subcategorySubcategory 40	-13044.54	14387.68	-0.907	0.364596	
## subcategorySubcategory 42	38013.57	12614.44	3.013	0.002583	**
## subcategorySubcategory 43	-20828.86	12120.29	-1.719	0.085707	.
## subcategorySubcategory 44	-25067.42	12134.66	-2.066	0.038853	*
## subcategorySubcategory 45	NA	NA	NA	NA	
## subcategorySubcategory 46	-23308.31	12961.57	-1.798	0.072139	.
## subcategorySubcategory 47	20885.54	12241.93	1.706	0.087999	.
## subcategorySubcategory 48	-18393.33	14660.61	-1.255	0.209624	
## subcategorySubcategory 50	-25791.92	12583.13	-2.050	0.040394	*
## subcategorySubcategory 51	-41750.30	15329.59	-2.724	0.006460	**
## subcategorySubcategory 52	-30803.54	13866.03	-2.222	0.026319	*
## subcategorySubcategory 53	-4894.25	13987.91	-0.350	0.726421	
## subcategorySubcategory 54	-20834.22	12182.50	-1.710	0.087237	.
## subcategorySubcategory 56	-13900.53	15092.79	-0.921	0.357050	
## subcategorySubcategory 57	-25606.49	12508.66	-2.047	0.040651	*
## subcategorySubcategory 59	-22112.79	12227.59	-1.808	0.070542	.
## subcategorySubcategory 6	-19640.68	12243.32	-1.604	0.108674	
## subcategorySubcategory 60	-22195.97	12211.67	-1.818	0.069128	.
## subcategorySubcategory 62	-4757.90	18057.34	-0.263	0.792175	
## subcategorySubcategory 64	-20527.36	12234.88	-1.678	0.093395	.

```

## subcategorySubcategory 65      -20849.76   12523.90  -1.665 0.095956 .
## subcategorySubcategory 66      -25034.18   14329.34  -1.747 0.080631 .
## subcategorySubcategory 67      -29528.74   14045.47  -2.102 0.035524 *
## subcategorySubcategory 68      -9357.20    12708.75  -0.736 0.461562
## subcategorySubcategory 69      -28926.91   12189.33  -2.373 0.017640 *
## subcategorySubcategory 71          NA         NA       NA       NA
## subcategorySubcategory 72      -19488.29   12265.33  -1.589 0.112088
## subcategorySubcategory 74      -26005.95   12936.11  -2.010 0.044398 *
## subcategorySubcategory 75      -26136.02   12020.15  -2.174 0.029681 *
## subcategorySubcategory 77      -33144.51   13759.64  -2.409 0.016006 *
## subcategorySubcategory 78      -25223.38   12961.21  -1.946 0.051650 .
## subcategorySubcategory 80      -26129.82   12068.00  -2.165 0.030374 *
## subcategorySubcategory 82      -27495.73   12065.25  -2.279 0.022674 *
## subcategorySubcategory 83      -31192.56   14126.86  -2.208 0.027245 *
## subcategorySubcategory 84      -10622.82   22496.15  -0.472 0.636781
## subcategorySubcategory 85      -15532.41   13893.99  -1.118 0.263603
## subcategorySubcategory 86      -24668.80   12340.80  -1.999 0.045615 *
## subcategorySubcategory 87          342.33    27189.33  0.013 0.989954
## subcategorySubcategory 88      -3657.76    12062.44  -0.303 0.761711
## subcategorySubcategory 89      -26911.35   12374.83  -2.175 0.029656 *
## subcategorySubcategory 9        -25987.37   12023.40  -2.161 0.030667 *
## subcategorySubcategory 90      -25788.59   12386.72  -2.082 0.037349 *
## subcategorySubcategory 92      -23835.74   12776.47  -1.866 0.062101 .
## subcategorySubcategory 94      -19069.48   12052.31  -1.582 0.113601
## subcategorySubcategory 95      -39411.92   22497.88  -1.752 0.079811 .
## subcategorySubcategory 96      -2450.91    13177.27  -0.186 0.852449
## subcategorySubcategory 97      -30277.89   19632.82  -1.542 0.123027
## subcategorySubcategory 99      -28704.92   13783.76  -2.083 0.037298 *
## problem_id                  NA         NA       NA       NA
## impact2 - Medium           -13167.26   7356.67  -1.790 0.073483 .
## impact3 - Low              -23522.04   8645.82  -2.721 0.006517 **
## urgency2 - Medium          -13485.37   7253.67  -1.859 0.063015 .
## urgency3 - Low             -21990.10   7515.09  -2.926 0.003433 **
## priority2 - High           12384.44   7346.16  1.686 0.091830 .
## priority3 - Moderate       30208.75   14572.65  2.073 0.038177 *
## priority4 - Low            49613.42   15802.07  3.140 0.001692 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 26910 on 91411 degrees of freedom
## Multiple R-squared:  0.1635, Adjusted R-squared:  0.1606
## F-statistic: 56.17 on 318 and 91411 DF,  p-value: < 2.2e-16

lm_full_data_v2 <- lm(resolved_updated_diff ~ incident_state + reassignment_count + reopen_count + made_sla + reopen_count + category + problem_id +
summary(lm_full_data_v2)

```

```

##
## Call:
## lm(formula = resolved_updated_diff ~ incident_state + reassignment_count +
##     reopen_count + made_sla + reopen_count + category + problem_id +
##     impact + urgency + priority, data = df_train)
##
## Residuals:
##   Min    1Q Median    3Q   Max

```

```

## -77453 -8939 -5093 2170 462194
##
## Coefficients: (1 not defined because of singularities)
##                                     Estimate Std. Error t value Pr(>|t|)
## (Intercept)                  -17531.58    15209.26 -1.153 0.24904
## incident_stateAwaiting Evidence   23196.47     5139.98  4.513 6.40e-06 ***
## incident_stateAwaiting Problem   20925.04     1458.18 14.350 < 2e-16 ***
## incident_stateAwaiting User Info   2171.26      301.56  7.200 6.06e-13 ***
## incident_stateAwaiting Vendor   22372.76     1245.63 17.961 < 2e-16 ***
## incident_stateNew             1288.20      231.19  5.572 2.53e-08 ***
## incident_stateResolved        -10191.52     255.67 -39.862 < 2e-16 ***
## reassignment_count            230.41       53.58  4.300 1.71e-05 ***
## reopen_count                  258.26      461.43  0.560 0.57569
## made_slaTRUE                  18432.38    13812.50  1.334 0.18205
## categoryCategory 12           6575.67     28274.29  0.233 0.81610
## categoryCategory 13           490.38      6407.82  0.077 0.93900
## categoryCategory 14           3353.11     20486.33  0.164 0.86999
## categoryCategory 15           -4889.04    17120.73 -0.286 0.77521
## categoryCategory 16           -321.32     13851.32 -0.023 0.98149
## categoryCategory 17           4969.43     6493.02  0.765 0.44407
## categoryCategory 19           12289.22    6377.11  1.927 0.05397 .
## categoryCategory 2            -1039.29    9919.79 -0.105 0.91656
## categoryCategory 20           1705.90     6339.87  0.269 0.78787
## categoryCategory 21           -1171.60    7407.33 -0.158 0.87433
## categoryCategory 22           10267.04    6528.15  1.573 0.11578
## categoryCategory 23           5146.09     6334.01  0.812 0.41653
## categoryCategory 24           11485.20    6341.94  1.811 0.07015 .
## categoryCategory 25           7002.80     8943.25  0.783 0.43361
## categoryCategory 26           2690.13     6327.67  0.425 0.67074
## categoryCategory 27           -3637.55    20486.88 -0.178 0.85907
## categoryCategory 28           4364.18     6367.79  0.685 0.49312
## categoryCategory 29           14156.30    8391.02  1.687 0.09159 .
## categoryCategory 30           3433.13     10440.85  0.329 0.74229
## categoryCategory 31           4768.83     7284.78  0.655 0.51271
## categoryCategory 32           2332.85     6336.17  0.368 0.71274
## categoryCategory 33           20785.93    6843.64  3.037 0.00239 **
## categoryCategory 34           47736.77    6345.83  7.523 5.42e-14 ***
## categoryCategory 35           1180.39     6372.82  0.185 0.85306
## categoryCategory 37           6633.57     6336.48  1.047 0.29516
## categoryCategory 38           5926.14     6629.00  0.894 0.37134
## categoryCategory 4            9088.42     9706.78  0.936 0.34912
## categoryCategory 40           4849.46     6345.60  0.764 0.44474
## categoryCategory 41           6203.06     8134.13  0.763 0.44571
## categoryCategory 42           5328.88     6328.74  0.842 0.39978
## categoryCategory 43           7088.04     6426.19  1.103 0.27003
## categoryCategory 44           3745.44     6372.21  0.588 0.55668
## categoryCategory 45           18398.43    6348.37  2.898 0.00375 **
## categoryCategory 46           11719.99    6329.54  1.852 0.06408 .
## categoryCategory 47           10830.75    7710.41  1.405 0.16012
## categoryCategory 48           1846.99     12184.77  0.152 0.87952
## categoryCategory 5            511.18      9200.93  0.056 0.95569
## categoryCategory 50           27.04       7515.59  0.004 0.99713
## categoryCategory 51           3126.93     6363.90  0.491 0.62318
## categoryCategory 52           2377.19     11615.33  0.205 0.83784

```

```

## categoryCategory 53          4175.17   6328.20   0.660  0.50940
## categoryCategory 54          6665.71   6944.73   0.960  0.33715
## categoryCategory 55          24744.10  6433.63   3.846  0.00012 ***
## categoryCategory 56          17616.73  6584.50   2.675  0.00746 **
## categoryCategory 57          4742.69   6336.42   0.748  0.45417
## categoryCategory 58          -2481.31  15161.26  -0.164  0.87000
## categoryCategory 59          3659.25   8466.22   0.432  0.66558
## categoryCategory 6           2486.05   13851.32  0.179  0.85756
## categoryCategory 61          5815.17   6340.05   0.917  0.35903
## categoryCategory 62          1721.22   9521.01   0.181  0.85654
## categoryCategory 63          1400.88   7351.14   0.191  0.84887
## categoryCategory 7           8345.88   6722.11   1.242  0.21440
## categoryCategory 8           3182.24   6671.23   0.477  0.63336
## categoryCategory 9           5470.62   6334.67   0.864  0.38781
## categoryNone                13895.01  7396.49   1.879  0.06030 .
## problem_id                  NA        NA        NA        NA
## impact2 - Medium            -4030.88  7498.99  -0.538  0.59091
## impact3 - Low               -16496.99 8806.72  -1.873  0.06104 .
## urgency2 - Medium           -4622.26  7395.70  -0.625  0.53198
## urgency3 - Low              -12290.08 7659.90  -1.604  0.10861
## priority2 - High            2630.52   7489.03  0.351  0.72540
## priority3 - Moderate        11368.18  14858.79  0.765  0.44422
## priority4 - Low             33848.63  16103.08  2.102  0.03556 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 27560 on 91658 degrees of freedom
## Multiple R-squared:  0.1207, Adjusted R-squared:  0.12
## F-statistic: 177.2 on 71 and 91658 DF,  p-value: < 2.2e-16

lm_full_data_v3 <- lm(resolved_updated_diff ~ incident_state + reassignment_count + reopen_count + made_sla + reopened_count + subcategory + problem_id + impact + urgency + priority, data = df_train)
summary(lm_full_data_v3)

```

```

##
## Call:
## lm(formula = resolved_updated_diff ~ incident_state + reassignment_count +
##     reopen_count + made_sla + reopened_count + subcategory + problem_id +
##     impact + urgency + priority, data = df_train)
##
## Residuals:
##      Min       1Q   Median       3Q      Max
## -121634    -9390   -4409    2174  459995
##
## Coefficients: (1 not defined because of singularities)
##                               Estimate Std. Error t value Pr(>|t|)
## (Intercept)                 3393.61   14236.05  0.238 0.811586
## incident_stateAwaiting Evidence 16726.35   5110.53  3.273 0.001065 ***
## incident_stateAwaiting Problem 18984.18   1450.48 13.088 < 2e-16 ***
## incident_stateAwaiting User Info 1723.41   299.13  5.761 8.37e-09 ***
## incident_stateAwaiting Vendor 23052.62   1225.76 18.807 < 2e-16 ***
## incident_stateNew            1583.29   230.02  6.883 5.89e-12 ***
## incident_stateResolved       -10229.72  253.15 -40.410 < 2e-16 ***
## reassignment_count           162.65    54.08  3.008 0.002634 **
## reopen_count                 349.65   460.39  0.759 0.447573

```

## made_slaTRUE		8290.78	13867.64	0.598	0.549941	.
## subcategorySubcategory 10		-11387.11	6481.90	-1.757	0.078963	.
## subcategorySubcategory 100		-5775.24	9598.75	-0.602	0.547398	
## subcategorySubcategory 101		-630.89	4427.39	-0.142	0.886687	
## subcategorySubcategory 102		-3754.55	7305.44	-0.514	0.607296	
## subcategorySubcategory 103		-11080.79	3257.42	-3.402	0.000670	***
## subcategorySubcategory 104		-14051.62	9597.16	-1.464	0.143158	
## subcategorySubcategory 105		-8044.36	3778.16	-2.129	0.033243	*
## subcategorySubcategory 106		-4558.29	3975.53	-1.147	0.251555	
## subcategorySubcategory 107		-463.89	3488.46	-0.133	0.894211	
## subcategorySubcategory 109		-7410.95	6292.28	-1.178	0.238885	
## subcategorySubcategory 11		-8999.25	9596.30	-0.938	0.348358	
## subcategorySubcategory 110		-9404.27	3774.59	-2.491	0.012723	*
## subcategorySubcategory 111		-8621.47	7489.55	-1.151	0.249681	
## subcategorySubcategory 112		20262.44	3447.35	5.878	4.17e-09	***
## subcategorySubcategory 113		2254.24	4317.78	0.522	0.601614	
## subcategorySubcategory 114		-4788.84	3245.95	-1.475	0.140128	
## subcategorySubcategory 115		57322.49	7694.49	7.450	9.43e-14	***
## subcategorySubcategory 116		-10621.85	19494.88	-0.545	0.585856	
## subcategorySubcategory 117		-12329.40	3448.33	-3.575	0.000350	***
## subcategorySubcategory 118		-10771.33	4934.46	-2.183	0.029047	*
## subcategorySubcategory 119		-11909.65	10755.86	-1.107	0.268180	
## subcategorySubcategory 12		-13414.84	8172.11	-1.642	0.100689	
## subcategorySubcategory 120		-11389.20	4668.21	-2.440	0.014700	*
## subcategorySubcategory 122		-4120.52	10781.36	-0.382	0.702322	
## subcategorySubcategory 123		-6137.35	3258.21	-1.884	0.059615	.
## subcategorySubcategory 124		-5342.49	27392.18	-0.195	0.845364	
## subcategorySubcategory 125		-10604.32	3227.86	-3.285	0.001019	**
## subcategorySubcategory 126		-12751.39	7137.74	-1.786	0.074026	.
## subcategorySubcategory 127		-7728.71	3697.18	-2.090	0.036582	*
## subcategorySubcategory 128		-11139.99	19494.93	-0.571	0.567709	
## subcategorySubcategory 129		-3235.91	8467.62	-0.382	0.702350	
## subcategorySubcategory 13		-13248.28	4031.12	-3.287	0.001015	**
## subcategorySubcategory 130		-8571.89	3591.18	-2.387	0.016992	*
## subcategorySubcategory 131		-13276.26	16019.81	-0.829	0.407254	
## subcategorySubcategory 132		-9666.77	4092.42	-2.362	0.018173	*
## subcategorySubcategory 134		36420.35	3377.55	10.783	< 2e-16	***
## subcategorySubcategory 135		-5222.28	3184.91	-1.640	0.101072	
## subcategorySubcategory 136		-11116.49	19494.93	-0.570	0.568527	
## subcategorySubcategory 138		-1996.46	6845.97	-0.292	0.770574	
## subcategorySubcategory 14		-12656.07	16020.01	-0.790	0.429520	
## subcategorySubcategory 140		-14415.66	12566.09	-1.147	0.251307	
## subcategorySubcategory 141		-5429.21	27392.00	-0.198	0.842886	
## subcategorySubcategory 142		-6459.00	7697.26	-0.839	0.401399	
## subcategorySubcategory 144		-12260.24	5874.32	-2.087	0.036883	*
## subcategorySubcategory 145		-4409.35	3601.52	-1.224	0.220841	
## subcategorySubcategory 146		-6765.80	3525.19	-1.919	0.054953	.
## subcategorySubcategory 149		-16574.40	16019.75	-1.035	0.300848	
## subcategorySubcategory 150		6358.44	3241.76	1.961	0.049834	*
## subcategorySubcategory 151		-10630.21	3826.43	-2.778	0.005469	**
## subcategorySubcategory 152		-5280.20	10751.59	-0.491	0.623350	
## subcategorySubcategory 153		-438.57	3509.78	-0.125	0.900559	
## subcategorySubcategory 154		58071.31	3279.79	17.706	< 2e-16	***
## subcategorySubcategory 155		-10773.17	8793.46	-1.225	0.220528	

## subcategorySubcategory 156	-11207.44	6850.81	-1.636	0.101858
## subcategorySubcategory 157	-6820.00	19494.71	-0.350	0.726461
## subcategorySubcategory 158	-13103.25	5199.61	-2.520	0.011736 *
## subcategorySubcategory 159	-8907.50	3667.72	-2.429	0.015158 *
## subcategorySubcategory 16	-4364.86	3357.42	-1.300	0.193583
## subcategorySubcategory 160	-17120.50	27391.27	-0.625	0.531950
## subcategorySubcategory 161	-11385.65	7490.12	-1.520	0.128492
## subcategorySubcategory 162	-4672.06	5512.87	-0.847	0.396729
## subcategorySubcategory 163	4165.98	3317.15	1.256	0.209158
## subcategorySubcategory 164	-5850.60	3154.86	-1.854	0.063675 .
## subcategorySubcategory 165	-5342.49	27392.18	-0.195	0.845364
## subcategorySubcategory 166	-11262.47	6986.01	-1.612	0.106934
## subcategorySubcategory 167	-12261.42	5164.99	-2.374	0.017601 *
## subcategorySubcategory 168	-8152.23	3390.44	-2.404	0.016198 *
## subcategorySubcategory 169	-1327.10	9157.74	-0.145	0.884777
## subcategorySubcategory 17	-14209.47	6486.71	-2.191	0.028487 *
## subcategorySubcategory 170	-6432.25	3185.32	-2.019	0.043455 *
## subcategorySubcategory 171	11185.11	3842.44	2.911	0.003604 **
## subcategorySubcategory 172	285.10	5949.91	0.048	0.961783
## subcategorySubcategory 173	-5745.50	16020.02	-0.359	0.719862
## subcategorySubcategory 174	-5385.14	3137.89	-1.716	0.086135 .
## subcategorySubcategory 175	-9033.39	3150.21	-2.868	0.004137 **
## subcategorySubcategory 176	-4724.01	5413.44	-0.873	0.382858
## subcategorySubcategory 177	35.53	3599.60	0.010	0.992124
## subcategorySubcategory 178	-9786.39	3967.43	-2.467	0.013639 *
## subcategorySubcategory 18	-12053.87	9596.13	-1.256	0.209077
## subcategorySubcategory 181	13237.76	4247.99	3.116	0.001832 **
## subcategorySubcategory 182	-7612.50	4125.18	-1.845	0.064986 .
## subcategorySubcategory 183	-10079.48	3610.55	-2.792	0.005245 **
## subcategorySubcategory 184	-10369.68	3543.74	-2.926	0.003432 **
## subcategorySubcategory 185	-11467.44	3357.68	-3.415	0.000637 ***
## subcategorySubcategory 186	-4305.06	9157.36	-0.470	0.638270
## subcategorySubcategory 187	-8001.52	16020.92	-0.499	0.617469
## subcategorySubcategory 188	64854.85	16021.07	4.048	5.17e-05 ***
## subcategorySubcategory 189	-10250.16	4059.91	-2.525	0.011580 *
## subcategorySubcategory 191	4886.94	3625.76	1.348	0.177713
## subcategorySubcategory 192	-8362.93	8458.06	-0.989	0.322787
## subcategorySubcategory 193	-12876.04	11542.63	-1.116	0.264630
## subcategorySubcategory 194	-12332.79	5460.80	-2.258	0.023922 *
## subcategorySubcategory 195	-13221.92	11542.28	-1.146	0.251997
## subcategorySubcategory 196	-11546.74	13967.33	-0.827	0.408411
## subcategorySubcategory 197	10680.44	5804.96	1.840	0.065789 .
## subcategorySubcategory 198	-9676.03	4685.26	-2.065	0.038906 *
## subcategorySubcategory 199	-3853.35	6985.31	-0.552	0.581199
## subcategorySubcategory 2	-11640.28	11542.23	-1.008	0.313220
## subcategorySubcategory 20	-6030.26	4067.64	-1.482	0.138212
## subcategorySubcategory 200	-2817.38	3352.88	-0.840	0.400750
## subcategorySubcategory 202	-1066.66	3396.37	-0.314	0.753477
## subcategorySubcategory 203	-9299.64	7695.35	-1.208	0.226868
## subcategorySubcategory 204	-11064.49	19494.93	-0.568	0.570337
## subcategorySubcategory 205	-8120.28	6984.81	-1.163	0.245010
## subcategorySubcategory 207	107309.36	7921.70	13.546	< 2e-16 ***
## subcategorySubcategory 208	96.79	4131.69	0.023	0.981310
## subcategorySubcategory 209	-13150.60	7305.48	-1.800	0.071848 .

## subcategorySubcategory 210	-8289.88	6990.80	-1.186	0.235693
## subcategorySubcategory 211	-5342.49	27392.18	-0.195	0.845364
## subcategorySubcategory 212	-13715.50	12566.17	-1.091	0.275072
## subcategorySubcategory 213	-7942.05	10120.10	-0.785	0.432585
## subcategorySubcategory 215	-9604.34	3548.57	-2.707	0.006800 **
## subcategorySubcategory 216	-11547.50	10147.60	-1.138	0.255143
## subcategorySubcategory 217	-9008.94	9167.41	-0.983	0.325751
## subcategorySubcategory 218	-7821.90	4492.23	-1.741	0.081651 .
## subcategorySubcategory 219	-5940.97	5323.77	-1.116	0.264454
## subcategorySubcategory 22	-15328.11	13962.23	-1.098	0.272283
## subcategorySubcategory 220	14056.94	3390.03	4.147	3.38e-05 ***
## subcategorySubcategory 222	-13396.48	9596.14	-1.396	0.162710
## subcategorySubcategory 223	-7516.62	3145.48	-2.390	0.016866 *
## subcategorySubcategory 224	-8423.62	3467.37	-2.429	0.015126 *
## subcategorySubcategory 225	13967.07	6845.03	2.040	0.041307 *
## subcategorySubcategory 226	-14125.91	7489.42	-1.886	0.059282 .
## subcategorySubcategory 227	-4723.35	11572.11	-0.408	0.683152
## subcategorySubcategory 228	-10617.57	3769.73	-2.817	0.004856 **
## subcategorySubcategory 229	2830.21	3474.23	0.815	0.415287
## subcategorySubcategory 23	-8535.41	5199.03	-1.642	0.100650
## subcategorySubcategory 230	30420.08	6102.46	4.985	6.21e-07 ***
## subcategorySubcategory 231	5127.07	3340.66	1.535	0.124849
## subcategorySubcategory 232	5676.71	7306.51	0.777	0.437197
## subcategorySubcategory 233	-5730.08	4092.52	-1.400	0.161476
## subcategorySubcategory 234	86833.67	13962.49	6.219	5.02e-10 ***
## subcategorySubcategory 235	28609.63	7692.97	3.719	0.000200 ***
## subcategorySubcategory 236	-16903.50	27391.27	-0.617	0.537162
## subcategorySubcategory 237	-4692.37	10117.74	-0.464	0.642809
## subcategorySubcategory 24	-13706.49	13961.79	-0.982	0.326243
## subcategorySubcategory 240	32095.52	6189.33	5.186	2.16e-07 ***
## subcategorySubcategory 241	-15757.50	27391.27	-0.575	0.565107
## subcategorySubcategory 242	-2344.99	4060.22	-0.578	0.563567
## subcategorySubcategory 243	-4428.88	4123.58	-1.074	0.282809
## subcategorySubcategory 244	-9938.25	5740.65	-1.731	0.083419 .
## subcategorySubcategory 245	10455.90	5683.07	1.840	0.065796 .
## subcategorySubcategory 246	-1715.04	5282.60	-0.325	0.745441
## subcategorySubcategory 247	1799.68	3950.24	0.456	0.648688
## subcategorySubcategory 248	-268.74	3560.72	-0.075	0.939839
## subcategorySubcategory 249	9636.33	3754.22	2.567	0.010266 *
## subcategorySubcategory 25	-10105.62	3855.75	-2.621	0.008771 **
## subcategorySubcategory 250	-5855.94	4132.87	-1.417	0.156510
## subcategorySubcategory 251	-2634.57	3293.90	-0.800	0.423810
## subcategorySubcategory 252	11881.25	4083.32	2.910	0.003619 **
## subcategorySubcategory 253	-10840.87	5809.47	-1.866	0.062035 .
## subcategorySubcategory 254	-5266.16	5239.13	-1.005	0.314823
## subcategorySubcategory 255	-879.75	3457.06	-0.254	0.799126
## subcategorySubcategory 256	-10337.84	6188.64	-1.670	0.094833 .
## subcategorySubcategory 257	16552.93	4533.18	3.652	0.000261 ***
## subcategorySubcategory 258	-8539.27	4046.31	-2.110	0.034828 *
## subcategorySubcategory 259	-6996.61	3533.74	-1.980	0.047713 *
## subcategorySubcategory 260	9169.17	4500.22	2.037	0.041603 *
## subcategorySubcategory 261	5359.33	4293.25	1.248	0.211919
## subcategorySubcategory 262	-4478.34	7305.54	-0.613	0.539874
## subcategorySubcategory 264	111218.50	27391.27	4.060	4.90e-05 ***

```

## subcategorySubcategory 269      -9827.97    6022.10   -1.632 0.102686
## subcategorySubcategory 270      -2711.23    3585.48   -0.756 0.449550
## subcategorySubcategory 271      -9419.83    3676.44   -2.562 0.010402 *
## subcategorySubcategory 273      590.01     7490.54    0.079 0.937218
## subcategorySubcategory 274      -14831.01   13963.45   -1.062 0.288179
## subcategorySubcategory 275      -8718.76    3183.06   -2.739 0.006162 **
## subcategorySubcategory 276      -8115.60    16019.88   -0.507 0.612440
## subcategorySubcategory 277      -2213.00    3729.87   -0.593 0.552970
## subcategorySubcategory 279      -10749.68   10751.61   -1.000 0.317400
## subcategorySubcategory 28       -11031.85   3264.07   -3.380 0.000726 ***
## subcategorySubcategory 280      -14024.48   13963.29   -1.004 0.315197
## subcategorySubcategory 281      -8045.56     4381.51   -1.836 0.066323 .
## subcategorySubcategory 282      -1159.07     8782.57   -0.132 0.895005
## subcategorySubcategory 283      8087.57     5740.56    1.409 0.158884
## subcategorySubcategory 284      112319.85   27391.34   4.101 4.13e-05 ***
## subcategorySubcategory 285      -9094.83     4017.86   -2.264 0.023601 *
## subcategorySubcategory 287      -11372.58    6716.16   -1.693 0.090399 .
## subcategorySubcategory 288      -7266.78    10119.13   -0.718 0.472683
## subcategorySubcategory 289      -5181.00     3722.14   -1.392 0.163944
## subcategorySubcategory 29       -4850.35     3301.87   -1.469 0.141844
## subcategorySubcategory 291      -9756.02     7492.63   -1.302 0.192892
## subcategorySubcategory 292      -478.10      6385.74   -0.075 0.940318
## subcategorySubcategory 294      52971.64     4964.35   10.670 < 2e-16 ***
## subcategorySubcategory 295      -375.67      9604.85   -0.039 0.968801
## subcategorySubcategory 296      -3640.53     7697.97   -0.473 0.636271
## subcategorySubcategory 298      -13320.85   13962.03   -0.954 0.340047
## subcategorySubcategory 299      -12965.01    6593.92   -1.966 0.049278 *
## subcategorySubcategory 3       -8252.02     3227.20   -2.557 0.010559 *
## subcategorySubcategory 30      10237.47     4255.16   2.406 0.016135 *
## subcategorySubcategory 300      -10307.83    3312.42   -3.112 0.001860 **
## subcategorySubcategory 301      -5158.42     3872.75   -1.332 0.182870
## subcategorySubcategory 302      -10908.22    3383.45   -3.224 0.001265 **
## subcategorySubcategory 303      -9757.81     3243.62   -3.008 0.002628 **
## subcategorySubcategory 304      -10810.58   13962.09   -0.774 0.438766
## subcategorySubcategory 305      60672.21     3714.15   16.335 < 2e-16 ***
## subcategorySubcategory 31      -442.70      3305.82   -0.134 0.893470
## subcategorySubcategory 32      8496.76     10751.81   0.790 0.429376
## subcategorySubcategory 33      -12893.12    7140.35   -1.806 0.070973 .
## subcategorySubcategory 34      -12259.72    6280.09   -1.952 0.050923 .
## subcategorySubcategory 35      -17642.56   16027.24   -1.101 0.270993
## subcategorySubcategory 36      -7943.19     3193.46   -2.487 0.012872 *
## subcategorySubcategory 37      -7620.60     8793.57   -0.867 0.386158
## subcategorySubcategory 4       -2249.39     4141.13   -0.543 0.587005
## subcategorySubcategory 40      2779.59     4644.09   0.599 0.549493
## subcategorySubcategory 42      61923.58    5024.68   12.324 < 2e-16 ***
## subcategorySubcategory 43      -4336.41     3231.23   -1.342 0.179590
## subcategorySubcategory 44      -8549.01     3283.36   -2.604 0.009223 **
## subcategorySubcategory 45      -13054.09    8172.20   -1.597 0.110185
## subcategorySubcategory 46      -5785.07     5873.30   -0.985 0.324638
## subcategorySubcategory 47      45204.90    4013.12   11.264 < 2e-16 ***
## subcategorySubcategory 48      -4039.83     8786.25   -0.460 0.645668
## subcategorySubcategory 50      -8268.82     4962.81   -1.666 0.095686 .
## subcategorySubcategory 51      -12972.55   10142.41   -1.279 0.200886
## subcategorySubcategory 52      -12115.70   7693.14   -1.575 0.115290

```

```

## subcategorySubcategory 53      -12979.27    7490.74  -1.733 0.083151 .
## subcategorySubcategory 54      -6505.97    3652.72  -1.781 0.074895 .
## subcategorySubcategory 56      -195.42     9720.17  -0.020 0.983960
## subcategorySubcategory 57      -11268.74    4644.53  -2.426 0.015258 *
## subcategorySubcategory 59      -7833.49     3804.12  -2.059 0.039477 *
## subcategorySubcategory 6       -4297.14     3917.83  -1.097 0.272725
## subcategorySubcategory 60      -7850.79     3750.48  -2.093 0.036327 *
## subcategorySubcategory 62      9547.49     13962.60  0.684 0.494110
## subcategorySubcategory 64      -6214.67     3827.86  -1.624 0.104478
## subcategorySubcategory 65      -6506.89     4686.78  -1.388 0.165034
## subcategorySubcategory 66      -10698.35    8456.71  -1.265 0.205849
## subcategorySubcategory 67      -5698.34     7934.14  -0.718 0.472633
## subcategorySubcategory 68      8174.24     5280.38  1.548 0.121616
## subcategorySubcategory 69      -12907.93    3501.84  -3.686 0.000228 ***
## subcategorySubcategory 71      -8697.82     19494.94 -0.446 0.655484
## subcategorySubcategory 72      2751.49     4067.92  0.676 0.498796
## subcategorySubcategory 74      -7301.16     5805.71  -1.258 0.208546
## subcategorySubcategory 75      -6896.25     3215.08  -2.145 0.031958 *
## subcategorySubcategory 77      -8837.91     7490.62  -1.180 0.238057
## subcategorySubcategory 78      -7741.64     5874.43  -1.318 0.187556
## subcategorySubcategory 80      -8608.30     3411.75  -2.523 0.011633 *
## subcategorySubcategory 82      -9978.01     3402.86  -2.932 0.003366 **
## subcategorySubcategory 83      -13691.68    8171.80  -1.675 0.093844 .
## subcategorySubcategory 84      6993.50     19496.10 0.359 0.719811
## subcategorySubcategory 85      1570.04     7693.11  0.204 0.838289
## subcategorySubcategory 86      -4632.67     3745.38  -1.237 0.216127
## subcategorySubcategory 87      -8611.50     16019.77 -0.538 0.590886
## subcategorySubcategory 88      19960.46    3398.54  5.873 4.29e-09 ***
## subcategorySubcategory 89      -10714.12    4342.41 -2.467 0.013615 *
## subcategorySubcategory 9       -9689.50     3180.60 -3.046 0.002316 **
## subcategorySubcategory 90      -6810.86     4003.34 -1.701 0.088891 .
## subcategorySubcategory 92      -9459.55     4933.23 -1.918 0.055175 .
## subcategorySubcategory 94      4590.30     3370.51  1.362 0.173233
## subcategorySubcategory 95      -10442.85    19495.45 -0.536 0.592198
## subcategorySubcategory 96      16578.38    5532.52  2.997 0.002731 **
## subcategorySubcategory 97      -11557.40    16020.01 -0.721 0.470644
## subcategorySubcategory 99      -9833.13     6378.74 -1.542 0.123187
## problem_id                  NA        NA        NA        NA
## impact2 - Medium           -14064.22   7434.02  -1.892 0.058511 .
## impact3 - Low               -25635.52   8730.82  -2.936 0.003323 **
## urgency2 - Medium          -14407.06   7330.72  -1.965 0.049383 *
## urgency3 - Low              -23131.81   7593.31  -3.046 0.002317 **
## priority2 - High            13475.14    7423.78  1.815 0.069507 .
## priority3 - Moderate        32359.09    14726.76 2.197 0.028002 *
## priority4 - Low             53470.78    15961.30 3.350 0.000808 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 27210 on 91461 degrees of freedom
## Multiple R-squared:  0.1445, Adjusted R-squared:  0.1419
## F-statistic: 57.62 on 268 and 91461 DF,  p-value: < 2.2e-16

```

```

lm_full_data_v4 <- lm(resolved_updated_diff ~ incident_state + reassignment_count + reopen_count + made
summary(lm_full_data_v4)

```

```

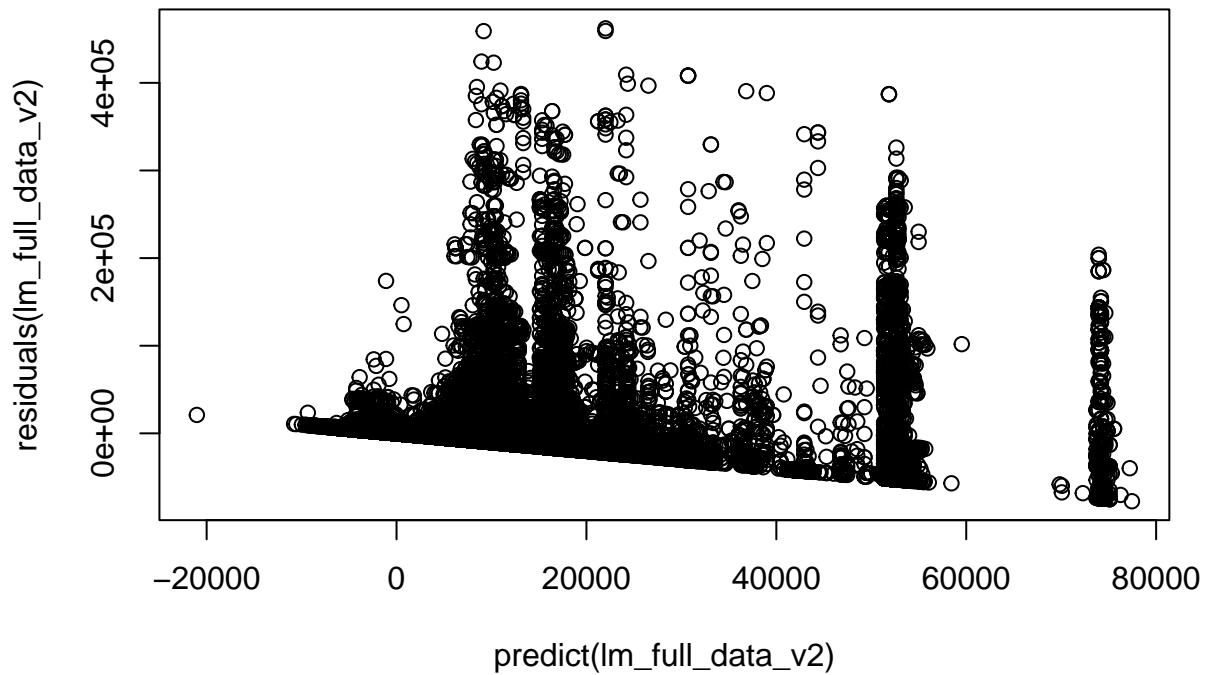
## 
## Call:
## lm(formula = resolved_updated_diff ~ incident_state + reassignment_count +
##      reopen_count + made_sla + reopen_count + problem_id + impact +
##      urgency + priority, data = df_train)
##
## Residuals:
##    Min      1Q Median      3Q     Max
## -63179 -10711 -5774       3 473497
##
## Coefficients: (1 not defined because of singularities)
##                               Estimate Std. Error t value Pr(>|t|)
## (Intercept)                2260.29   14360.12   0.157 0.874930
## incident_stateAwaiting Evidence  28305.54    5327.04   5.314 1.08e-07 ***
## incident_stateAwaiting Problem  23777.24   1509.15  15.755 < 2e-16 ***
## incident_stateAwaiting User Info 1883.32    311.90   6.038 1.56e-09 ***
## incident_stateAwaiting Vendor  47318.33   1233.95  38.347 < 2e-16 ***
## incident_stateNew           1158.67    238.84   4.851 1.23e-06 ***
## incident_stateResolved      -10714.29   264.65 -40.485 < 2e-16 ***
## reassignment_count          272.78     55.11   4.950 7.43e-07 ***
## reopen_count                 -432.17   478.28  -0.904 0.366216
## made_slaTRUE                 6495.27   14340.64   0.453 0.650602
## problem_id                  NA        NA        NA        NA
## impact2 - Medium            -14700.67   7786.57  -1.888 0.059036 .
## impact3 - Low                -28182.03   9135.06  -3.085 0.002036 **
## urgency2 - Medium           -15534.20   7680.54  -2.023 0.043123 *
## urgency3 - Low               -22491.37   7953.53  -2.828 0.004687 **
## priority2 - High             12897.59   7777.23   1.658 0.097245 .
## priority3 - Moderate         32190.22   15430.70   2.086 0.036971 *
## priority4 - Low              56142.37   16711.26   3.360 0.000781 ***
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 28670 on 91713 degrees of freedom
## Multiple R-squared:  0.04765,    Adjusted R-squared:  0.04749
## F-statistic: 286.8 on 16 and 91713 DF,  p-value: < 2.2e-16

```

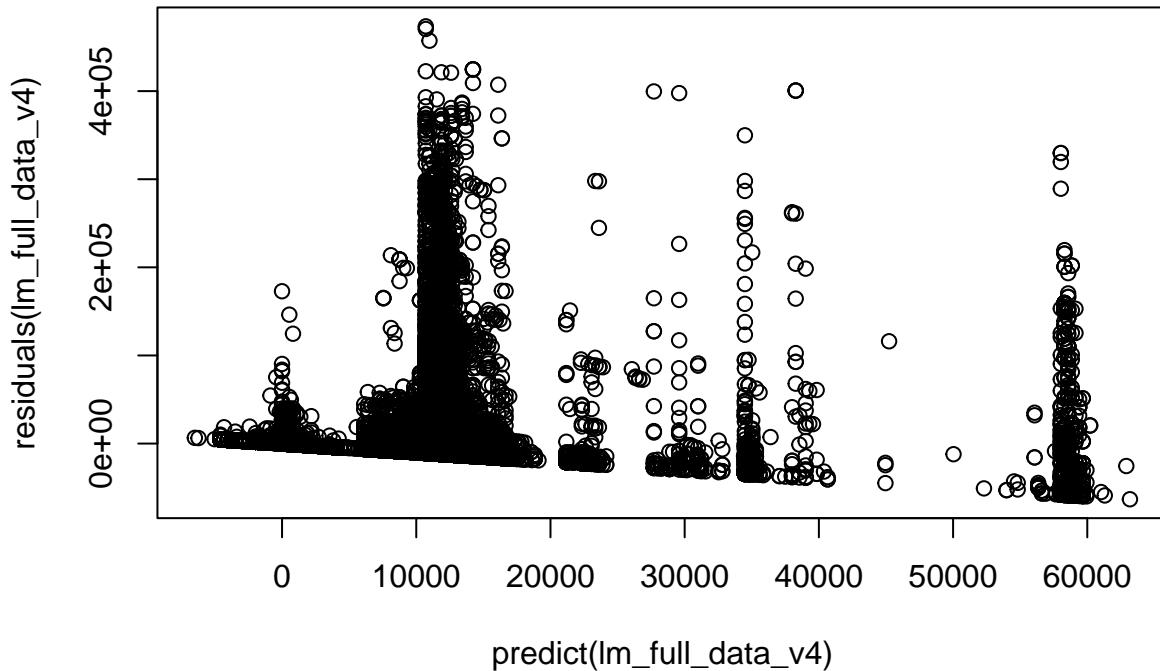
```
z <- predict(lm_full_data_v4, df_test)
```

```
## Warning in predict.lm(lm_full_data_v4, df_test): prediction from a rank-
## deficient fit may be misleading
```

```
plot(predict(lm_full_data_v2), residuals(lm_full_data_v2))
```



```
plot(predict(lm_full_data_v4), residuals(lm_full_data_v4))
```



```

dfm$resolved_updated_diff_hours <- round((dfm$resolved_updated_diff) / 60)
train_idx = createDataPartition(dfm$resolved_updated_diff, p = 0.8, list=F)
df_train = dfm[train_idx,]
df_test = dfm[-train_idx,]

lm_full_data_hours <- lm(resolved_updated_diff_hours ~ incident_state + reassignment_count + reopen_count +
summary(lm_full_data_hours)

##
## Call:
## lm(formula = resolved_updated_diff_hours ~ incident_state + reassignment_count +
##     reopen_count + made_sla + reopen_count + category + subcategory +
##     problem_id + impact + urgency + priority, data = df_train)
##
## Residuals:
##      Min       1Q   Median       3Q      Max 
## -1844.0  -140.2   -70.2    41.4  7666.8 
##
## Coefficients: (7 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)    
## (Intercept) -142.7129   438.3975 -0.326 0.744778  
## incident_stateAwaiting Evidence  259.7784   82.6884  3.142 0.001681 ** 
## incident_stateAwaiting Problem   286.8864   23.8842 12.012 < 2e-16 *** 
## incident_stateAwaiting User Info  33.2375   4.9612  6.699 2.10e-11 *** 
## incident_stateAwaiting Vendor   308.9837  20.8123 14.846 < 2e-16 *** 

```

## incident_stateNew	29.9960	3.8209	7.850	4.19e-15	***
## incident_stateResolved	-165.5964	4.1940	-39.484	< 2e-16	***
## reassignment_count	3.0547	0.9021	3.386	0.000709	***
## reopen_count	9.9406	7.5525	1.316	0.188109	
## made_slaTRUE	234.4831	327.4131	0.716	0.473889	
## categoryCategory 12	-50.8337	431.6177	-0.118	0.906246	
## categoryCategory 13	364.5487	173.8557	2.097	0.036010	*
## categoryCategory 14	-75.1866	431.6150	-0.174	0.861710	
## categoryCategory 15	269.7597	481.6721	0.560	0.575448	
## categoryCategory 16	-75.3337	431.6177	-0.175	0.861443	
## categoryCategory 17	420.9776	172.6339	2.439	0.014748	*
## categoryCategory 19	453.9076	172.8002	2.627	0.008621	**
## categoryCategory 2	-105.9693	312.3071	-0.339	0.734376	
## categoryCategory 20	380.5358	170.1736	2.236	0.025344	*
## categoryCategory 21	-181.4894	175.9837	-1.031	0.302410	
## categoryCategory 22	374.3452	208.0986	1.799	0.072040	.
## categoryCategory 23	433.3434	169.9230	2.550	0.010767	*
## categoryCategory 24	512.9670	169.9633	3.018	0.002544	**
## categoryCategory 25	121.8517	142.8529	0.853	0.393669	
## categoryCategory 26	366.2537	169.9503	2.155	0.031159	*
## categoryCategory 27	279.2235	481.3218	0.580	0.561836	
## categoryCategory 28	402.9397	170.1433	2.368	0.017875	*
## categoryCategory 29	131.4289	177.0756	0.742	0.457956	
## categoryCategory 3	-190.2983	474.7503	-0.401	0.688540	
## categoryCategory 30	374.9590	215.7672	1.738	0.082250	.
## categoryCategory 31	-14.1402	148.8448	-0.095	0.924315	
## categoryCategory 32	383.3008	170.1503	2.253	0.024279	*
## categoryCategory 33	395.9358	163.8465	2.417	0.015672	*
## categoryCategory 34	1065.0338	170.5202	6.246	4.24e-10	***
## categoryCategory 35	351.6278	174.0320	2.020	0.043337	*
## categoryCategory 37	481.3860	170.4251	2.825	0.004735	**
## categoryCategory 38	432.0639	174.3486	2.478	0.013208	*
## categoryCategory 4	-105.7662	300.2284	-0.352	0.724625	
## categoryCategory 40	382.5420	171.8760	2.226	0.026038	*
## categoryCategory 41	14.4778	283.9722	0.051	0.959339	
## categoryCategory 42	500.9157	169.8591	2.949	0.003189	**
## categoryCategory 43	336.9919	174.5371	1.931	0.053514	.
## categoryCategory 44	349.7927	170.4393	2.052	0.040143	*
## categoryCategory 45	602.9195	169.9400	3.548	0.000389	***
## categoryCategory 46	491.2332	169.8319	2.892	0.003823	**
## categoryCategory 47	486.5245	186.5526	2.608	0.009109	**
## categoryCategory 48	322.8058	265.9608	1.214	0.224852	
## categoryCategory 49	258.8701	431.6234	0.600	0.548668	
## categoryCategory 5	-128.5001	187.5970	-0.685	0.493359	
## categoryCategory 50	-126.6101	207.1047	-0.611	0.540980	
## categoryCategory 51	373.4562	170.3269	2.193	0.028340	*
## categoryCategory 52	-113.8615	212.2589	-0.536	0.591664	
## categoryCategory 53	402.8154	169.8010	2.372	0.017681	*
## categoryCategory 54	-17.3066	161.5869	-0.107	0.914707	
## categoryCategory 55	605.7126	171.3735	3.534	0.000409	***
## categoryCategory 56	36.5825	173.0541	0.211	0.832581	
## categoryCategory 57	410.2274	170.2454	2.410	0.015971	*
## categoryCategory 58	-124.4676	368.2143	-0.338	0.735341	
## categoryCategory 59	-21.6262	300.3290	-0.072	0.942595	

## categoryCategory 6	-141.9981	352.0620	-0.403	0.686704
## categoryCategory 61	469.0090	170.4285	2.752	0.005926 **
## categoryCategory 62	633.7414	263.5641	2.405	0.016196 *
## categoryCategory 63	323.1419	196.2199	1.647	0.099595 .
## categoryCategory 7	479.2523	175.8218	2.726	0.006416 **
## categoryCategory 8	387.6618	180.6360	2.146	0.031868 *
## categoryCategory 9	429.9991	169.9125	2.531	0.011385 *
## categoryNone	91.7919	297.7127	0.308	0.757837
## subcategorySubcategory 10	26.4359	259.7105	0.102	0.918924
## subcategorySubcategory 100	-388.6391	300.3461	-1.294	0.195679
## subcategorySubcategory 101	-347.1190	260.3496	-1.333	0.182443
## subcategorySubcategory 102	-392.2204	272.5784	-1.439	0.150175
## subcategorySubcategory 103	-455.2902	255.3203	-1.783	0.074555 .
## subcategorySubcategory 104	58.4939	305.5190	0.191	0.848168
## subcategorySubcategory 105	-352.5520	260.2019	-1.355	0.175447
## subcategorySubcategory 106	-448.3243	257.9188	-1.738	0.082172 .
## subcategorySubcategory 107	-250.7582	258.7143	-0.969	0.332424
## subcategorySubcategory 109	-415.8617	269.6213	-1.542	0.122982
## subcategorySubcategory 11	-479.0510	292.1702	-1.640	0.101086
## subcategorySubcategory 110	-474.4356	257.1604	-1.845	0.065055 .
## subcategorySubcategory 111	-353.2266	295.2833	-1.196	0.231610
## subcategorySubcategory 112	-616.8432	256.2324	-2.407	0.016070 *
## subcategorySubcategory 113	-263.1512	259.6418	-1.014	0.310816
## subcategorySubcategory 114	-372.3951	255.0212	-1.460	0.144224
## subcategorySubcategory 115	549.9435	277.1209	1.984	0.047204 *
## subcategorySubcategory 116	-466.9473	407.7733	-1.145	0.252165
## subcategorySubcategory 117	-500.2495	255.8158	-1.956	0.050526 .
## subcategorySubcategory 118	-503.3793	263.2604	-1.912	0.055867 .
## subcategorySubcategory 119	-94.6333	296.1356	-0.320	0.749302
## subcategorySubcategory 12	-539.2103	297.2577	-1.814	0.069689 .
## subcategorySubcategory 120	-499.1115	261.7907	-1.907	0.056585 .
## subcategorySubcategory 122	-363.2605	289.3098	-1.256	0.209260
## subcategorySubcategory 123	-452.2118	255.4898	-1.770	0.076734 .
## subcategorySubcategory 124	-585.2500	518.0559	-1.130	0.258604
## subcategorySubcategory 125	-445.2871	255.2129	-1.745	0.081029 .
## subcategorySubcategory 126	76.2904	286.4803	0.266	0.790007
## subcategorySubcategory 127	-410.6887	256.7237	-1.600	0.109662
## subcategorySubcategory 128	-58.0271	409.0073	-0.142	0.887181
## subcategorySubcategory 129	61.9079	290.4205	0.213	0.831197
## subcategorySubcategory 13	-502.8900	258.1142	-1.948	0.051379 .
## subcategorySubcategory 130	-439.8390	256.2647	-1.716	0.086102 .
## subcategorySubcategory 131	-35.9685	411.1696	-0.087	0.930291
## subcategorySubcategory 132	-390.9843	261.2065	-1.497	0.134438
## subcategorySubcategory 134	-358.3481	255.9595	-1.400	0.161511
## subcategorySubcategory 135	-444.8896	255.2262	-1.743	0.081316 .
## subcategorySubcategory 136	NA	NA	NA	NA
## subcategorySubcategory 138	-358.2955	273.3933	-1.311	0.190013
## subcategorySubcategory 14	-138.0057	481.1009	-0.287	0.774225
## subcategorySubcategory 140	-534.3881	314.0929	-1.701	0.088877 .
## subcategorySubcategory 141	-389.7649	517.6519	-0.753	0.451483
## subcategorySubcategory 142	-346.5061	285.9282	-1.212	0.225568
## subcategorySubcategory 144	-570.5404	267.2033	-2.135	0.032745 *
## subcategorySubcategory 145	-385.8448	256.4407	-1.505	0.132426
## subcategorySubcategory 146	-418.7434	256.4866	-1.633	0.102554

## subcategorySubcategory 149	-723.4453	340.9068	-2.122	0.033830 *
## subcategorySubcategory 150	-292.4463	255.0471	-1.147	0.251535
## subcategorySubcategory 151	-1129.5498	258.0697	-4.377	1.21e-05 ***
## subcategorySubcategory 152	-372.7386	316.9896	-1.176	0.239650
## subcategorySubcategory 153	-328.1209	255.9886	-1.282	0.199923
## subcategorySubcategory 154	20.1668	255.5990	0.079	0.937112
## subcategorySubcategory 155	-441.2022	294.7538	-1.497	0.134436
## subcategorySubcategory 156	-463.9375	282.7356	-1.641	0.100824
## subcategorySubcategory 157	-405.6089	413.1735	-0.982	0.326254
## subcategorySubcategory 158	-138.0971	283.6106	-0.487	0.626312
## subcategorySubcategory 159	-448.6615	257.0548	-1.745	0.080920 .
## subcategorySubcategory 16	-426.9805	255.8257	-1.669	0.095115 .
## subcategorySubcategory 160	-113.4161	410.8143	-0.276	0.782490
## subcategorySubcategory 161	-675.8809	279.5985	-2.417	0.015637 *
## subcategorySubcategory 162	-1044.3205	265.9278	-3.927	8.60e-05 ***
## subcategorySubcategory 163	-284.8853	257.3209	-1.107	0.268245
## subcategorySubcategory 164	-419.7440	254.7248	-1.648	0.099390 .
## subcategorySubcategory 165	NA	NA	NA	NA
## subcategorySubcategory 166	-503.1493	273.3902	-1.840	0.065712 .
## subcategorySubcategory 167	-427.6818	261.7169	-1.634	0.102233
## subcategorySubcategory 168	-424.6460	255.5574	-1.662	0.096587 .
## subcategorySubcategory 169	-346.8646	306.3142	-1.132	0.257477
## subcategorySubcategory 17	-609.9067	270.0516	-2.258	0.023918 *
## subcategorySubcategory 170	-431.1170	255.2758	-1.689	0.091256 .
## subcategorySubcategory 171	311.2526	262.0986	1.188	0.235018
## subcategorySubcategory 172	-323.2647	269.0018	-1.202	0.229475
## subcategorySubcategory 173	-458.4705	363.9606	-1.260	0.207791
## subcategorySubcategory 174	-422.3573	254.5670	-1.659	0.097095 .
## subcategorySubcategory 175	-404.5878	254.7993	-1.588	0.112320
## subcategorySubcategory 176	48.0417	294.9350	0.163	0.870606
## subcategorySubcategory 177	66.1645	249.6895	0.265	0.791020
## subcategorySubcategory 178	-458.2198	257.8334	-1.777	0.075540 .
## subcategorySubcategory 18	-508.2686	295.6089	-1.719	0.085546 .
## subcategorySubcategory 181	-673.8473	259.7474	-2.594	0.009482 **
## subcategorySubcategory 182	-395.4182	259.1626	-1.526	0.127075
## subcategorySubcategory 183	-556.3220	256.4827	-2.169	0.030082 *
## subcategorySubcategory 184	-482.4842	256.5267	-1.881	0.059998 .
## subcategorySubcategory 185	-507.2549	255.8460	-1.983	0.047409 *
## subcategorySubcategory 186	-12.0557	299.7801	-0.040	0.967922
## subcategorySubcategory 187	-406.6839	324.6786	-1.253	0.210364
## subcategorySubcategory 188	489.1691	340.2922	1.437	0.150580
## subcategorySubcategory 189	-554.4550	258.1211	-2.148	0.031713 *
## subcategorySubcategory 191	-344.8413	256.4210	-1.345	0.178685
## subcategorySubcategory 192	-680.4894	346.3701	-1.965	0.049460 *
## subcategorySubcategory 193	-143.6469	310.3346	-0.463	0.643453
## subcategorySubcategory 194	-506.7983	265.1963	-1.911	0.056004 .
## subcategorySubcategory 195	-109.2299	302.0130	-0.362	0.717597
## subcategorySubcategory 196	-683.7153	364.9037	-1.874	0.060977 .
## subcategorySubcategory 197	-865.0582	269.4357	-3.211	0.001325 **
## subcategorySubcategory 198	-477.3722	261.8565	-1.823	0.068302 .
## subcategorySubcategory 199	-534.4534	275.0088	-1.943	0.051970 .
## subcategorySubcategory 2	-448.1326	360.6076	-1.243	0.213976
## subcategorySubcategory 20	-390.5559	258.3718	-1.512	0.130638
## subcategorySubcategory 200	-526.8710	255.6083	-2.061	0.039283 *

## subcategorySubcategory 202	-388.5268	255.6264	-1.520	0.128539
## subcategorySubcategory 203	-367.5104	295.2970	-1.245	0.213302
## subcategorySubcategory 204	-499.0974	340.0006	-1.468	0.142126
## subcategorySubcategory 205	-1087.1291	276.3226	-3.934	8.35e-05 ***
## subcategorySubcategory 207	1116.9327	281.8616	3.963	7.42e-05 ***
## subcategorySubcategory 208	-359.5115	258.3821	-1.391	0.164109
## subcategorySubcategory 209	-471.5792	279.5861	-1.687	0.091664 .
## subcategorySubcategory 210	6.6876	375.9262	0.018	0.985807
## subcategorySubcategory 211	-492.4945	364.2871	-1.352	0.176398
## subcategorySubcategory 212	-596.6586	295.6658	-2.018	0.043592 *
## subcategorySubcategory 213	-445.7089	324.7145	-1.373	0.169875
## subcategorySubcategory 215	-428.7453	257.6385	-1.664	0.096089 .
## subcategorySubcategory 216	-494.8054	306.9893	-1.612	0.107009
## subcategorySubcategory 217	-455.3845	296.0386	-1.538	0.123988
## subcategorySubcategory 218	-426.8996	260.4583	-1.639	0.101210
## subcategorySubcategory 219	-410.5326	264.1986	-1.554	0.120217
## subcategorySubcategory 22	-140.3436	343.5764	-0.408	0.682923
## subcategorySubcategory 220	-189.1107	255.5343	-0.740	0.459265
## subcategorySubcategory 222	-101.1591	290.3365	-0.348	0.727525
## subcategorySubcategory 223	-511.9216	254.7253	-2.010	0.044466 *
## subcategorySubcategory 224	-523.3315	255.8845	-2.045	0.040839 *
## subcategorySubcategory 225	-33.1172	272.1487	-0.122	0.903147
## subcategorySubcategory 226	-520.9227	285.9170	-1.822	0.068468 .
## subcategorySubcategory 227	-377.4062	325.3195	-1.160	0.246007
## subcategorySubcategory 228	-566.6694	257.0995	-2.204	0.027521 *
## subcategorySubcategory 229	-424.8251	256.0486	-1.659	0.097087 .
## subcategorySubcategory 23	-454.4068	263.6074	-1.724	0.084747 .
## subcategorySubcategory 230	36.8182	267.7950	0.137	0.890647
## subcategorySubcategory 231	-320.5566	255.4117	-1.255	0.209461
## subcategorySubcategory 232	-401.7526	277.2953	-1.449	0.147390
## subcategorySubcategory 233	-471.6753	258.6671	-1.823	0.068233 .
## subcategorySubcategory 234	631.8850	300.5223	2.103	0.035502 *
## subcategorySubcategory 235	83.7106	286.1085	0.293	0.769841
## subcategorySubcategory 236	-678.2532	407.9134	-1.663	0.096368 .
## subcategorySubcategory 237	-585.3409	300.5264	-1.948	0.051452 .
## subcategorySubcategory 24	-161.3826	343.5831	-0.470	0.638567
## subcategorySubcategory 240	-5.5900	270.3163	-0.021	0.983501
## subcategorySubcategory 242	-421.5821	258.0622	-1.634	0.102337
## subcategorySubcategory 243	-453.5593	258.8241	-1.752	0.079711 .
## subcategorySubcategory 244	-550.6137	268.0899	-2.054	0.039994 *
## subcategorySubcategory 245	-152.4977	265.2648	-0.575	0.565368
## subcategorySubcategory 246	-462.6733	264.7395	-1.748	0.080527 .
## subcategorySubcategory 247	-373.7606	257.6501	-1.451	0.146880
## subcategorySubcategory 248	-412.5760	256.2196	-1.610	0.107348
## subcategorySubcategory 249	-119.4338	256.8335	-0.465	0.641915
## subcategorySubcategory 25	-427.8256	257.7685	-1.660	0.096973 .
## subcategorySubcategory 250	-454.3296	258.6685	-1.756	0.079021 .
## subcategorySubcategory 251	-403.7437	255.2694	-1.582	0.113736
## subcategorySubcategory 252	-244.3241	258.4797	-0.945	0.344541
## subcategorySubcategory 253	-654.9403	271.6555	-2.411	0.015914 *
## subcategorySubcategory 254	-473.9625	264.2304	-1.794	0.072857 .
## subcategorySubcategory 255	-367.3808	255.8993	-1.436	0.151106
## subcategorySubcategory 256	-559.7249	269.5902	-2.076	0.037878 *
## subcategorySubcategory 257	-136.3552	260.5849	-0.523	0.600791

## subcategorySubcategory 258	-516.2262	258.1791	-1.999	0.045558 *
## subcategorySubcategory 259	-504.9819	256.0938	-1.972	0.048628 *
## subcategorySubcategory 260	-127.1512	260.9572	-0.487	0.626083
## subcategorySubcategory 261	-316.2747	259.7647	-1.218	0.223401
## subcategorySubcategory 262	-555.3239	275.0092	-2.019	0.043460 *
## subcategorySubcategory 269	-446.0932	267.1926	-1.670	0.095011 .
## subcategorySubcategory 270	-421.2903	256.6475	-1.642	0.100694
## subcategorySubcategory 271	-452.3261	256.8451	-1.761	0.078227 .
## subcategorySubcategory 273	-287.0281	276.3161	-1.039	0.298916
## subcategorySubcategory 274	-580.3203	324.7012	-1.787	0.073901 .
## subcategorySubcategory 275	-402.8274	254.9051	-1.580	0.114041
## subcategorySubcategory 276	-75.5696	385.9734	-0.196	0.844775
## subcategorySubcategory 277	-320.7718	283.6100	-1.131	0.258045
## subcategorySubcategory 279	-364.9477	303.5674	-1.202	0.229290
## subcategorySubcategory 28	-426.6201	257.9319	-1.654	0.098130 .
## subcategorySubcategory 280	NA	NA	NA	NA
## subcategorySubcategory 281	-409.8298	266.5058	-1.538	0.124104
## subcategorySubcategory 282	212.2723	385.2507	0.551	0.581637
## subcategorySubcategory 283	-321.1156	266.1770	-1.206	0.227667
## subcategorySubcategory 284	2000.1220	518.3900	3.858	0.000114 ***
## subcategorySubcategory 285	-535.1529	258.0774	-2.074	0.038118 *
## subcategorySubcategory 287	-474.4030	273.0045	-1.738	0.082265 .
## subcategorySubcategory 288	-427.1672	306.7089	-1.393	0.163700
## subcategorySubcategory 289	-433.5403	259.0230	-1.674	0.094183 .
## subcategorySubcategory 29	-490.0284	255.2709	-1.920	0.054906 .
## subcategorySubcategory 291	-426.5553	292.4896	-1.458	0.144745
## subcategorySubcategory 292	-302.2648	294.2583	-1.027	0.304325
## subcategorySubcategory 294	-214.2210	263.0991	-0.814	0.415520
## subcategorySubcategory 295	-359.0557	294.7618	-1.218	0.223181
## subcategorySubcategory 296	-442.8532	278.9474	-1.588	0.112383
## subcategorySubcategory 298	-512.5492	339.9423	-1.508	0.131621
## subcategorySubcategory 299	-594.6867	272.5432	-2.182	0.029113 *
## subcategorySubcategory 3	-458.9361	255.0530	-1.799	0.071963 .
## subcategorySubcategory 30	-235.6401	258.9724	-0.910	0.362875
## subcategorySubcategory 300	-446.1712	255.5015	-1.746	0.080770 .
## subcategorySubcategory 301	-350.6660	257.6962	-1.361	0.173589
## subcategorySubcategory 302	-434.4726	258.2545	-1.682	0.092506 .
## subcategorySubcategory 303	-455.4382	255.0169	-1.786	0.074117 .
## subcategorySubcategory 304	-81.6636	365.3365	-0.224	0.823124
## subcategorySubcategory 305	714.3010	256.8729	2.781	0.005424 **
## subcategorySubcategory 31	-381.7372	255.3309	-1.495	0.134900
## subcategorySubcategory 32	-358.3053	301.4216	-1.189	0.234554
## subcategorySubcategory 33	-505.2913	274.2862	-1.842	0.065448 .
## subcategorySubcategory 34	-491.0083	273.8414	-1.793	0.072970 .
## subcategorySubcategory 35	-563.3108	339.9944	-1.657	0.097559 .
## subcategorySubcategory 36	-489.6309	255.2586	-1.918	0.055092 .
## subcategorySubcategory 37	-323.3152	291.6083	-1.109	0.267549
## subcategorySubcategory 4	-391.3576	260.6945	-1.501	0.133304
## subcategorySubcategory 40	-211.7014	286.8026	-0.738	0.460429
## subcategorySubcategory 42	711.0111	262.7477	2.706	0.006810 **
## subcategorySubcategory 43	-341.2307	256.3594	-1.331	0.183171
## subcategorySubcategory 44	-409.2105	256.5322	-1.595	0.110679
## subcategorySubcategory 45	NA	NA	NA	NA
## subcategorySubcategory 46	-399.4531	268.0350	-1.490	0.136148

```

## subcategorySubcategory 47      308.4139  257.8140  1.196 0.231596
## subcategorySubcategory 48     -292.8080  288.4698 -1.015 0.310090
## subcategorySubcategory 50     -441.9620  262.9829 -1.681 0.092849 .
## subcategorySubcategory 51     -677.6170  292.1028 -2.320 0.020354 *
## subcategorySubcategory 52     -508.1861  283.6983 -1.791 0.073250 .
## subcategorySubcategory 53       11.8141  263.2367  0.045 0.964203
## subcategorySubcategory 54     -341.9028  257.0472 -1.330 0.183483
## subcategorySubcategory 56     -318.8611  294.1414 -1.084 0.278350
## subcategorySubcategory 57     -436.2173  262.2649 -1.663 0.096262 .
## subcategorySubcategory 59     -346.1633  257.6149 -1.344 0.179041
## subcategorySubcategory 6      -325.1806  257.8433 -1.261 0.207256
## subcategorySubcategory 60     -369.6181  257.4853 -1.435 0.151150
## subcategorySubcategory 62       77.8184  340.4057 -0.229 0.819176
## subcategorySubcategory 64     -312.8912  258.0051 -1.213 0.225235
## subcategorySubcategory 65     -340.8390  262.1449 -1.300 0.193538
## subcategorySubcategory 66     -417.3298  286.4721 -1.457 0.145178
## subcategorySubcategory 67     -528.8310  279.3916 -1.893 0.058388 .
## subcategorySubcategory 68     -99.0649  263.7423 -0.376 0.707206
## subcategorySubcategory 69     -478.9401  257.2871 -1.862 0.062677 .
## subcategorySubcategory 71          NA        NA        NA        NA
## subcategorySubcategory 72     -334.2099  258.2105 -1.294 0.195554
## subcategorySubcategory 74     -502.1480  266.5100 -1.884 0.059546 .
## subcategorySubcategory 75     -440.3091  254.9850 -1.727 0.084206 .
## subcategorySubcategory 77     -539.0779  280.0494 -1.925 0.054240 .
## subcategorySubcategory 78     -413.2249  270.1074 -1.530 0.126056
## subcategorySubcategory 8          NA        NA        NA        NA
## subcategorySubcategory 80     -452.4253  255.6037 -1.770 0.076726 .
## subcategorySubcategory 82     -454.3714  255.5865 -1.778 0.075447 .
## subcategorySubcategory 83     -526.9526  291.7698 -1.806 0.070913 .
## subcategorySubcategory 84     -177.4339  407.7817 -0.435 0.663476
## subcategorySubcategory 85     -274.9580  280.3676 -0.981 0.326741
## subcategorySubcategory 86     -443.6892  259.3399 -1.711 0.087114 .
## subcategorySubcategory 87      81.8683  514.9984  0.159 0.873694
## subcategorySubcategory 88     -31.3606  255.6498 -0.123 0.902369
## subcategorySubcategory 89     -466.6128  261.0281 -1.788 0.073845 .
## subcategorySubcategory 9       432.6802  255.0337 -1.697 0.089783 .
## subcategorySubcategory 90     -431.3010  259.8473 -1.660 0.096953 .
## subcategorySubcategory 92     -409.1235  265.3988 -1.542 0.123188
## subcategorySubcategory 94     -348.8841  255.5136 -1.365 0.172124
## subcategorySubcategory 95     -665.2552  407.9099 -1.631 0.102917
## subcategorySubcategory 96      17.3462  268.3958  0.065 0.948469
## subcategorySubcategory 97     -511.2661  364.0123 -1.405 0.160164
## subcategorySubcategory 99     -362.9214  278.8353 -1.302 0.193069
## problem_id          NA        NA        NA        NA
## impact2 - Medium    -96.2363  130.2296 -0.739 0.459924
## impact3 - Low       -132.7753  151.0349 -0.879 0.379348
## urgency2 - Medium   -94.8136  128.6000 -0.737 0.460957
## urgency3 - Low      -266.1108  132.6963 -2.005 0.044922 *
## priority2 - High    73.4108  130.0497  0.564 0.572427
## priority3 - Moderate 244.4136  258.2332  0.946 0.343904
## priority4 - Low      462.8776  277.9416  1.665 0.095841 .
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##

```

```

## Residual standard error: 450.4 on 91411 degrees of freedom
## Multiple R-squared:  0.1622, Adjusted R-squared:  0.1593
## F-statistic: 55.66 on 318 and 91411 DF,  p-value: < 2.2e-16

lm_full_data_hours_v2 <- lm(resolved_updated_diff_hours ~ incident_state + reassignment_count + reopen_
summary(lm_full_data_hours_v2)

## 
## Call:
## lm(formula = resolved_updated_diff_hours ~ incident_state + reassignment_count +
##     reopen_count + made_sla + reopen_count + category + problem_id +
##     impact + urgency + priority, data = df_train)
## 
## Residuals:
##    Min      1Q  Median      3Q      Max 
## -1317.9  -149.7   -84.0    39.6  7694.9 
## 
## Coefficients: (1 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)    
## (Intercept) -299.2532  345.3953 -0.866 0.386269  
## incident_stateAwaiting Evidence  433.6538   83.5420  5.191 2.10e-07 ***
## incident_stateAwaiting Problem  336.9321   24.2127 13.915 < 2e-16 ***
## incident_stateAwaiting User Info 40.7619    5.0480  8.075 6.83e-16 *** 
## incident_stateAwaiting Vendor  409.5119   21.0720 19.434 < 2e-16 *** 
## incident_stateNew            24.3534    3.8690  6.295 3.10e-10 *** 
## incident_stateResolved       -169.3862   4.2778 -39.596 < 2e-16 *** 
## reassignment_count           4.0362    0.8996  4.487 7.25e-06 *** 
## reopen_count                 7.3981    7.6174  0.971 0.331446  
## made_slaTRUE                 317.7858   326.5391  0.973 0.330460  
## categoryCategory 12          40.6101   344.7813  0.118 0.906238  
## categoryCategory 13          7.2962   113.2506  0.064 0.948632  
## categoryCategory 14          13.3809   344.7801  0.039 0.969042  
## categoryCategory 15          -82.7596   474.5867 -0.174 0.861565  
## categoryCategory 16          -5.6783   234.6438 -0.024 0.980693  
## categoryCategory 17          80.6960   114.5836  0.704 0.481276  
## categoryCategory 19          196.8034   112.7764  1.745 0.080975 .  
## categoryCategory 2           -16.4307   160.6583 -0.102 0.918541  
## categoryCategory 20          26.3264   112.1426  0.235 0.814397  
## categoryCategory 21          -25.8443   129.1734 -0.200 0.841423  
## categoryCategory 22          156.1374   115.0348  1.357 0.174687  
## categoryCategory 23          83.3944   112.0489  0.744 0.456716  
## categoryCategory 24          190.8316   112.1771  1.701 0.088916 .  
## categoryCategory 25          102.4550   146.2314  0.701 0.483532  
## categoryCategory 26          44.2350   111.9492  0.395 0.692744  
## categoryCategory 27          -56.4063   474.5945 -0.119 0.905393  
## categoryCategory 28          64.6274   112.6171  0.574 0.566058  
## categoryCategory 29          265.6840   147.5817  1.800 0.071824 .  
## categoryCategory 3           -37.4063   474.5945 -0.079 0.937178  
## categoryCategory 30          62.6497   173.8959  0.360 0.718645  
## categoryCategory 31          73.2592   126.9643  0.577 0.563936  
## categoryCategory 32          37.9937   112.0841  0.339 0.734630  
## categoryCategory 33          357.5657   119.6713  2.988 0.002810 ** 
## categoryCategory 34          780.1791   112.2429  6.951 3.66e-12 *** 
## categoryCategory 35          18.8020   112.6736  0.167 0.867472

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## categoryCategory 37      117.7328  112.0840  1.050 0.293538
## categoryCategory 38      84.7155  116.7321  0.726 0.468009
## categoryCategory 4       163.6384  166.4602  0.983 0.325586
## categoryCategory 40      82.0568  112.2406  0.731 0.464733
## categoryCategory 41      111.1987  146.2104  0.761 0.446935
## categoryCategory 42      93.5645  111.9667  0.836 0.403357
## categoryCategory 43      111.9291  113.5516  0.986 0.324278
## categoryCategory 44      69.4324  112.6550  0.616 0.537680
## categoryCategory 45      316.6711  112.2709  2.821 0.004794 **
## categoryCategory 46      201.1765  111.9797  1.797 0.072411 .
## categoryCategory 47      148.7868  137.0146  1.086 0.277518
## categoryCategory 48      50.7281  207.1298  0.245 0.806527
## categoryCategory 49      351.2404  344.7802  1.019 0.308330
## categoryCategory 5       26.2868  160.6662  0.164 0.870037
## categoryCategory 50     -10.4245  130.9160 -0.080 0.936533
## categoryCategory 51      54.8760  112.5220  0.488 0.625770
## categoryCategory 52      41.6539  190.1391  0.219 0.826596
## categoryCategory 53      66.4744  111.9580  0.594 0.552685
## categoryCategory 54      104.9702  121.6613  0.863 0.388246
## categoryCategory 55      438.7445  113.5662  3.863 0.000112 ***
## categoryCategory 56      336.8804  115.9009  2.907 0.003654 **
## categoryCategory 57      74.2600  112.0840  0.663 0.507627
## categoryCategory 58     -43.4173  256.3294 -0.169 0.865497
## categoryCategory 59      54.8661  147.5864  0.372 0.710076
## categoryCategory 6       23.9253  256.3065  0.093 0.925629
## categoryCategory 61      95.6681  112.1435  0.853 0.393613
## categoryCategory 62      98.5177  154.0075  0.640 0.522373
## categoryCategory 63      28.6424  128.5583  0.223 0.823694
## categoryCategory 7      132.2225  118.4762  1.116 0.264414
## categoryCategory 8      50.4654  117.4058  0.430 0.667315
## categoryCategory 9      95.3313  112.0632  0.851 0.394943
## categoryNone            175.0216  128.3402  1.364 0.172655
## problem_id              NA        NA        NA        NA
## impact2 - Medium       20.3713  132.9207  0.153 0.878195
## impact3 - Low           -53.1314  154.0053 -0.345 0.730097
## urgency2 - Medium      19.8541  131.2936  0.151 0.879803
## urgency3 - Low          -137.6907  135.4275 -1.017 0.309293
## priority2 - High        -53.3039  132.7518 -0.402 0.688030
## priority3 - Moderate    -0.3516  263.6440 -0.001 0.998936
## priority4 - Low          276.3255  283.5674  0.974 0.329830
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 461.2 on 91656 degrees of freedom
## Multiple R-squared:  0.1192, Adjusted R-squared:  0.1185
## F-statistic: 169.9 on 73 and 91656 DF,  p-value: < 2.2e-16

lm_full_data_hours_v3 <- lm(resolved_updated_diff_hours ~ incident_state + reassignment_count + reopen_
summary(lm_full_data_hours_v3)

##
## Call:
## lm(formula = resolved_updated_diff_hours ~ incident_state + reassignment_count +
##     reopen_count + made_sla + reopen_count + subcategory + problem_id +

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```

##      impact + urgency + priority, data = df_train)
##
## Residuals:
##   Min     1Q Median     3Q    Max
## -1837.2 -156.9  -72.4   32.0 7662.9
##
## Coefficients: (1 not defined because of singularities)
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept) -7.2476  335.0738 -0.022 0.982743
## incident_stateAwaiting Evidence 316.1699  82.6914  3.823 0.000132 ***
## incident_stateAwaiting Problem 305.6820  24.0543 12.708 < 2e-16 ***
## incident_stateAwaiting User Info 31.1792  5.0032  6.232 4.63e-10 ***
## incident_stateAwaiting Vendor 417.1722  20.7288 20.125 < 2e-16 ***
## incident_stateNew            28.4153  3.8470  7.386 1.52e-13 ***
## incident_stateResolved       -170.2040  4.2323 -40.215 < 2e-16 ***
## reassignment_count           2.9192  0.9073  3.217 0.001294 **
## reopen_count                 7.6716  7.5917  1.011 0.312246
## made_slaTRUE                168.4975 330.7351  0.509 0.610429
## subcategorySubcategory 10    -167.2482 108.3699 -1.543 0.122759
## subcategorySubcategory 100   -58.0426 169.2239 -0.343 0.731604
## subcategorySubcategory 101   22.6364  74.1893  0.305 0.760277
## subcategorySubcategory 102   -28.2958 110.2336 -0.257 0.797419
## subcategorySubcategory 103   -147.7281 54.4362 -2.714 0.006653 **
## subcategorySubcategory 104   -196.2845 160.4844 -1.223 0.221305
## subcategorySubcategory 105   -88.5538 63.1252 -1.403 0.160672
## subcategorySubcategory 106   -20.4881 66.3686 -0.309 0.757549
## subcategorySubcategory 107   29.7102  58.3313  0.509 0.610518
## subcategorySubcategory 109   -85.9486 103.7140 -0.829 0.407272
## subcategorySubcategory 11    -122.3004 153.1291 -0.799 0.424481
## subcategorySubcategory 110   -117.7082 63.3690 -1.858 0.063243 .
## subcategorySubcategory 111   -103.0506 125.2253 -0.823 0.410555
## subcategorySubcategory 112   368.0354  57.6979  6.379 1.79e-10 ***
## subcategorySubcategory 113   67.1168  73.2276  0.917 0.359381
## subcategorySubcategory 114   -41.9986 54.1692 -0.775 0.438152
## subcategorySubcategory 115   1019.0265 122.1776  8.341 < 2e-16 ***
## subcategorySubcategory 116   -138.2213 326.0323 -0.424 0.671603
## subcategorySubcategory 117   -170.6838 57.8858 -2.949 0.003193 **
## subcategorySubcategory 118   -136.8012 83.9942 -1.629 0.103380
## subcategorySubcategory 119   -129.8721 153.3547 -0.847 0.397068
## subcategorySubcategory 12    -191.6648 160.4969 -1.194 0.232404
## subcategorySubcategory 120   -142.4834 79.1138 -1.801 0.071707 .
## subcategorySubcategory 122   -25.3624 147.4722 -0.172 0.863453
## subcategorySubcategory 123   -43.8241 54.4364 -0.805 0.420793
## subcategorySubcategory 124   -49.8097 458.1144 -0.109 0.913419
## subcategorySubcategory 125   -137.8805 53.9047 -2.558 0.010534 *
## subcategorySubcategory 126   -177.9055 119.3460 -1.491 0.136051
## subcategorySubcategory 127   -80.6548  61.8157 -1.305 0.191977
## subcategorySubcategory 128   -147.1193 326.0329 -0.451 0.651817
## subcategorySubcategory 129   -33.2503 147.0522 -0.226 0.821115
## subcategorySubcategory 13    -173.3037  67.4786 -2.568 0.010222 *
## subcategorySubcategory 130   -109.6993  59.8490 -1.833 0.066816 .
## subcategorySubcategory 131   -183.5020 267.9106 -0.685 0.493385
## subcategorySubcategory 132   -112.3521  68.6525 -1.637 0.101732
## subcategorySubcategory 134   617.0359  56.4931 10.922 < 2e-16 ***

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## subcategorySubcategory 135	-36.6629	53.1617	-0.690	0.490416
## subcategorySubcategory 136	-147.1193	326.0329	-0.451	0.651817
## subcategorySubcategory 138	-21.2745	112.2933	-0.189	0.849737
## subcategorySubcategory 14	-233.7213	326.0323	-0.717	0.473459
## subcategorySubcategory 140	-204.8146	193.0211	-1.061	0.288647
## subcategorySubcategory 141	-49.8097	458.1144	-0.109	0.913419
## subcategorySubcategory 142	-16.0159	141.4431	-0.113	0.909847
## subcategorySubcategory 144	-162.6714	95.9852	-1.695	0.090125 .
## subcategorySubcategory 145	-32.8193	60.3266	-0.544	0.586424
## subcategorySubcategory 146	-77.6053	58.8480	-1.319	0.187259
## subcategorySubcategory 149	-190.6703	233.4866	-0.817	0.414147
## subcategorySubcategory 150	167.5406	54.1637	3.093	0.001981 **
## subcategorySubcategory 151	-137.7991	65.4724	-2.105	0.035321 *
## subcategorySubcategory 152	-49.2661	193.0191	-0.255	0.798539
## subcategorySubcategory 153	1.5706	58.6586	0.027	0.978640
## subcategorySubcategory 154	993.3620	54.8222	18.120	< 2e-16 ***
## subcategorySubcategory 155	-162.4867	153.3503	-1.060	0.289339
## subcategorySubcategory 156	-151.4464	119.4624	-1.268	0.204897
## subcategorySubcategory 157	-76.4290	326.0300	-0.234	0.814657
## subcategorySubcategory 158	-172.2154	85.0899	-2.024	0.042981 *
## subcategorySubcategory 159	-107.4975	61.3129	-1.753	0.079560 .
## subcategorySubcategory 16	-32.2898	56.0153	-0.576	0.564315
## subcategorySubcategory 160	-148.6193	326.0329	-0.456	0.648505
## subcategorySubcategory 161	-143.7277	125.2412	-1.148	0.251134
## subcategorySubcategory 162	-53.0710	92.1580	-0.576	0.564705
## subcategorySubcategory 163	96.4853	55.5489	1.737	0.082400 .
## subcategorySubcategory 164	-52.5287	52.6955	-0.997	0.318848
## subcategorySubcategory 165	-122.6193	326.0329	-0.376	0.706847
## subcategorySubcategory 166	-138.3098	112.2720	-1.232	0.217983
## subcategorySubcategory 167	-165.3865	81.5761	-2.027	0.042626 *
## subcategorySubcategory 168	-95.5064	56.6787	-1.685	0.091983 .
## subcategorySubcategory 169	-16.8920	179.8015	-0.094	0.925151
## subcategorySubcategory 17	-209.0458	103.5723	-2.018	0.043557 *
## subcategorySubcategory 170	-74.3165	53.1836	-1.397	0.162309
## subcategorySubcategory 171	274.5978	64.3456	4.268	1.98e-05 ***
## subcategorySubcategory 172	6.3225	102.0889	0.062	0.950618
## subcategorySubcategory 173	-128.3366	267.9142	-0.479	0.631924
## subcategorySubcategory 174	-54.7370	52.4042	-1.045	0.296250
## subcategorySubcategory 175	-111.4784	52.6103	-2.119	0.034098 *
## subcategorySubcategory 176	-38.9312	92.1516	-0.422	0.672684
## subcategorySubcategory 177	75.9011	59.8897	1.267	0.205034
## subcategorySubcategory 178	-128.3223	66.3930	-1.933	0.053268 .
## subcategorySubcategory 18	-179.0455	160.4686	-1.116	0.264525
## subcategorySubcategory 181	315.6386	71.9394	4.388	1.15e-05 ***
## subcategorySubcategory 182	-94.2536	70.1505	-1.344	0.179084
## subcategorySubcategory 183	-128.8519	60.4555	-2.131	0.033063 *
## subcategorySubcategory 184	-140.8709	58.9875	-2.388	0.016935 *
## subcategorySubcategory 185	-154.2117	55.9160	-2.758	0.005818 **
## subcategorySubcategory 186	-47.9656	160.4734	-0.299	0.765017
## subcategorySubcategory 187	-77.3751	210.1517	-0.368	0.712735
## subcategorySubcategory 188	826.6977	233.5031	3.540	0.000400 ***
## subcategorySubcategory 189	-146.3831	65.8948	-2.221	0.026322 *
## subcategorySubcategory 191	109.6203	60.4151	1.814	0.069612 .
## subcategorySubcategory 192	-121.1095	132.4245	-0.915	0.360428

## subcategorySubcategory 193	-180.1504	179.8063	-1.002	0.316388	.
## subcategorySubcategory 194	-176.4898	91.2863	-1.933	0.053194	.
## subcategorySubcategory 195	-198.9434	169.1922	-1.176	0.239661	
## subcategorySubcategory 196	-150.3531	267.9948	-0.561	0.574778	
## subcategorySubcategory 197	122.9547	102.0200	1.205	0.228128	
## subcategorySubcategory 198	-120.7612	80.6394	-1.498	0.134255	
## subcategorySubcategory 199	-4.3875	116.7981	-0.038	0.970035	
## subcategorySubcategory 2	-146.5895	233.4878	-0.628	0.530120	
## subcategorySubcategory 20	-61.1718	68.4905	-0.893	0.371783	
## subcategorySubcategory 200	2.6754	55.9301	0.048	0.961848	
## subcategorySubcategory 202	-17.2741	56.8241	-0.304	0.761134	
## subcategorySubcategory 203	-117.2046	125.2450	-0.936	0.349377	
## subcategorySubcategory 204	-141.2453	233.4930	-0.605	0.545232	
## subcategorySubcategory 205	-94.8615	119.3479	-0.795	0.426713	
## subcategorySubcategory 207	1638.2320	132.4348	12.370	< 2e-16	***
## subcategorySubcategory 208	72.4103	68.3507	1.059	0.289423	
## subcategorySubcategory 209	-180.8107	122.1612	-1.480	0.138850	
## subcategorySubcategory 210	-90.3407	119.4464	-0.756	0.449454	
## subcategorySubcategory 211	-155.0841	267.9134	-0.579	0.562686	
## subcategorySubcategory 212	-178.8798	160.4847	-1.115	0.265015	
## subcategorySubcategory 213	-114.4467	210.2065	-0.544	0.586134	
## subcategorySubcategory 215	-119.2574	59.8653	-1.992	0.046363	*
## subcategorySubcategory 216	-156.2644	180.2218	-0.867	0.385908	
## subcategorySubcategory 217	-117.6671	160.5468	-0.733	0.463612	
## subcategorySubcategory 218	-88.7288	74.5771	-1.190	0.234144	
## subcategorySubcategory 219	-80.5952	88.2822	-0.913	0.361283	
## subcategorySubcategory 22	-177.0261	233.4921	-0.758	0.448353	
## subcategorySubcategory 220	260.4468	56.4737	4.612	4.00e-06	***
## subcategorySubcategory 222	-191.1611	146.8527	-1.302	0.193015	
## subcategorySubcategory 223	-81.8088	52.5318	-1.557	0.119398	
## subcategorySubcategory 224	-95.5134	57.8086	-1.652	0.098490	.
## subcategorySubcategory 225	296.6162	110.2546	2.690	0.007140	**
## subcategorySubcategory 226	-191.2535	141.4098	-1.352	0.176226	
## subcategorySubcategory 227	-38.3304	210.6030	-0.182	0.855581	
## subcategorySubcategory 228	-133.9110	62.9821	-2.126	0.033491	*
## subcategorySubcategory 229	93.4949	58.2041	1.606	0.108205	
## subcategorySubcategory 23	-108.3722	85.0827	-1.274	0.202763	
## subcategorySubcategory 230	566.6984	98.1923	5.771	7.89e-09	***
## subcategorySubcategory 231	98.3500	55.7016	1.766	0.077456	.
## subcategorySubcategory 232	129.5057	122.1636	1.060	0.289102	
## subcategorySubcategory 233	-52.4600	69.3799	-0.756	0.449575	
## subcategorySubcategory 234	1161.0369	169.2177	6.861	6.87e-12	***
## subcategorySubcategory 235	613.6275	141.4116	4.339	1.43e-05	***
## subcategorySubcategory 236	-147.1193	326.0329	-0.451	0.651817	
## subcategorySubcategory 237	-54.5515	169.1920	-0.322	0.747132	
## subcategorySubcategory 24	-197.1732	233.4878	-0.844	0.398410	
## subcategorySubcategory 240	525.1711	105.0069	5.001	5.71e-07	***
## subcategorySubcategory 242	-3.0672	67.0281	-0.046	0.963501	
## subcategorySubcategory 243	-35.2059	69.9617	-0.503	0.614813	
## subcategorySubcategory 244	-132.3396	99.4002	-1.331	0.183067	
## subcategorySubcategory 245	253.7807	91.3549	2.778	0.005471	**
## subcategorySubcategory 246	-44.8791	89.7704	-0.500	0.617124	
## subcategorySubcategory 247	42.2881	65.3595	0.647	0.517628	
## subcategorySubcategory 248	5.2488	59.3597	0.088	0.929541	

## subcategorySubcategory 249	298.7837	61.9987	4.819	1.44e-06	***
## subcategorySubcategory 25	-128.2903	64.7320	-1.982	0.047497	*
## subcategorySubcategory 250	-35.4646	69.3511	-0.511	0.609088	
## subcategorySubcategory 251	14.3538	55.0082	0.261	0.794140	
## subcategorySubcategory 252	174.7520	68.6303	2.546	0.010889	*
## subcategorySubcategory 253	-127.8147	108.4581	-1.178	0.238612	
## subcategorySubcategory 254	-47.0905	88.2555	-0.534	0.593640	
## subcategorySubcategory 255	50.4077	57.9500	0.870	0.384386	
## subcategorySubcategory 256	-141.6015	103.4659	-1.369	0.171134	
## subcategorySubcategory 257	282.0739	76.3547	3.694	0.000221	***
## subcategorySubcategory 258	-98.5142	67.4931	-1.460	0.144399	
## subcategorySubcategory 259	-86.9448	58.8569	-1.477	0.139619	
## subcategorySubcategory 260	290.2974	77.6331	3.739	0.000185	***
## subcategorySubcategory 261	101.6935	73.4482	1.385	0.166190	
## subcategorySubcategory 262	-25.5356	116.7867	-0.219	0.826922	
## subcategorySubcategory 269	-115.4712	97.0583	-1.190	0.234164	
## subcategorySubcategory 270	-31.9380	59.7879	-0.534	0.593212	
## subcategorySubcategory 271	-122.6094	62.3463	-1.967	0.049234	*
## subcategorySubcategory 273	49.5993	119.3667	0.416	0.677762	
## subcategorySubcategory 274	-250.3704	210.1628	-1.191	0.233532	
## subcategorySubcategory 275	-109.6333	53.1484	-2.063	0.039137	*
## subcategorySubcategory 276	-162.2558	267.9180	-0.606	0.544770	
## subcategorySubcategory 277	-20.5811	62.2807	-0.330	0.741056	
## subcategorySubcategory 279	-154.8982	179.7937	-0.862	0.388947	
## subcategorySubcategory 28	-147.6584	54.5395	-2.707	0.006783	**
## subcategorySubcategory 280	-196.5163	233.5136	-0.842	0.400035	
## subcategorySubcategory 281	-95.3912	71.9554	-1.326	0.184943	
## subcategorySubcategory 282	33.6301	146.8570	0.229	0.818870	
## subcategorySubcategory 283	74.5888	93.0376	0.802	0.422726	
## subcategorySubcategory 284	1909.6518	458.1014	4.169	3.07e-05	***
## subcategorySubcategory 285	-126.1698	65.7126	-1.920	0.054858	.
## subcategorySubcategory 287	-142.9521	112.3086	-1.273	0.203074	
## subcategorySubcategory 288	-89.5871	179.8115	-0.498	0.618325	
## subcategorySubcategory 289	-52.6616	63.1125	-0.834	0.404053	
## subcategorySubcategory 29	-46.7954	55.1283	-0.849	0.395970	
## subcategorySubcategory 291	-109.9519	141.4607	-0.777	0.437007	
## subcategorySubcategory 292	-4.0786	100.7913	-0.040	0.967722	
## subcategorySubcategory 294	766.5157	83.4992	9.180	< 2e-16	***
## subcategorySubcategory 295	-69.0103	153.2616	-0.450	0.652511	
## subcategorySubcategory 296	-34.2318	125.2864	-0.273	0.784678	
## subcategorySubcategory 298	-183.0665	233.4922	-0.784	0.433021	
## subcategorySubcategory 299	-185.4010	110.2522	-1.682	0.092648	.
## subcategorySubcategory 3	-98.8200	53.9254	-1.833	0.066875	.
## subcategorySubcategory 30	193.0889	70.3785	2.744	0.006079	**
## subcategorySubcategory 300	-136.0222	55.3762	-2.456	0.014038	*
## subcategorySubcategory 301	-49.9171	64.4037	-0.775	0.438303	
## subcategorySubcategory 302	-142.9114	56.6716	-2.522	0.011679	*
## subcategorySubcategory 303	-126.1572	54.1547	-2.330	0.019831	*
## subcategorySubcategory 304	-171.6969	267.9135	-0.641	0.521611	
## subcategorySubcategory 305	1114.6119	61.7169	18.060	< 2e-16	***
## subcategorySubcategory 31	46.2193	55.1964	0.837	0.402392	
## subcategorySubcategory 32	173.1178	169.2086	1.023	0.306262	
## subcategorySubcategory 33	-167.9135	114.4736	-1.467	0.142425	
## subcategorySubcategory 34	-160.8718	114.4332	-1.406	0.159783	

## subcategorySubcategory 35	-238.0302	233.5642	-1.019	0.308148
## subcategorySubcategory 36	-93.8377	53.3267	-1.760	0.078466 .
## subcategorySubcategory 37	-39.9903	147.0462	-0.272	0.785656
## subcategorySubcategory 4	-10.0920	69.8115	-0.145	0.885058
## subcategorySubcategory 40	86.5352	75.7584	1.142	0.253352
## subcategorySubcategory 42	1148.6469	83.4620	13.763 < 2e-16 ***	
## subcategorySubcategory 43	-32.6364	54.0144	-0.604	0.545701
## subcategorySubcategory 44	-100.0513	54.7917	-1.826	0.067849 .
## subcategorySubcategory 45	-178.4051	125.2364	-1.425	0.154292
## subcategorySubcategory 46	-69.3459	99.3941	-0.698	0.485375
## subcategorySubcategory 47	759.2546	66.2236	11.465 < 2e-16 ***	
## subcategorySubcategory 48	-14.3625	141.4715	-0.102	0.919136
## subcategorySubcategory 50	-111.9147	84.5323	-1.324	0.185530
## subcategorySubcategory 51	-151.6329	153.3981	-0.988	0.322914
## subcategorySubcategory 52	-151.5450	136.6424	-1.109	0.267406
## subcategorySubcategory 53	-178.4792	125.2478	-1.425	0.154158
## subcategorySubcategory 54	-65.1907	60.5871	-1.076	0.281938
## subcategorySubcategory 56	-48.4915	156.6725	-0.310	0.756935
## subcategorySubcategory 57	-159.3001	80.2283	-1.986	0.047083 *
## subcategorySubcategory 59	-69.9295	63.0109	-1.110	0.267088
## subcategorySubcategory 6	-24.5686	65.0373	-0.378	0.705609
## subcategorySubcategory 60	-92.5638	62.4489	-1.482	0.138282
## subcategorySubcategory 62	198.3479	233.5014	0.849	0.395633
## subcategorySubcategory 64	-36.3609	64.6184	-0.563	0.573639
## subcategorySubcategory 65	-63.8119	79.8365	-0.799	0.424129
## subcategorySubcategory 66	-140.2075	141.4075	-0.992	0.321438
## subcategorySubcategory 67	-43.0836	125.5905	-0.343	0.731563
## subcategorySubcategory 68	230.8533	86.9225	2.656	0.007912 **
## subcategorySubcategory 69	-178.3335	58.6350	-3.041	0.002355 **
## subcategorySubcategory 71	-149.1405	326.0330	-0.457	0.647356
## subcategorySubcategory 72	83.0152	67.6057	1.228	0.219476
## subcategorySubcategory 74	-145.2362	94.9535	-1.530	0.126131
## subcategorySubcategory 75	-80.5720	53.6451	-1.502	0.133114
## subcategorySubcategory 77	-97.4702	128.6508	-0.758	0.448672
## subcategorySubcategory 78	-83.3889	105.0020	-0.794	0.427101
## subcategorySubcategory 8	185.5710	326.0300	0.569	0.569233
## subcategorySubcategory 80	-122.2059	56.8822	-2.148	0.031684 *
## subcategorySubcategory 82	-124.2827	56.8203	-2.187	0.028724 *
## subcategorySubcategory 83	-197.4154	153.1322	-1.289	0.197338
## subcategorySubcategory 84	154.2411	326.0524	0.473	0.636174
## subcategorySubcategory 85	63.2649	128.6338	0.492	0.622846
## subcategorySubcategory 86	-63.7526	63.3240	-1.007	0.314049
## subcategorySubcategory 87	-133.4290	326.0300	-0.409	0.682354
## subcategorySubcategory 88	411.2834	56.8743	7.231	4.82e-13 ***
## subcategorySubcategory 89	-159.8516	77.3051	-2.068	0.038662 *
## subcategorySubcategory 9	-122.3614	53.1209	-2.303	0.021256 *
## subcategorySubcategory 90	-83.2509	66.9639	-1.243	0.213790
## subcategorySubcategory 92	-130.4446	83.4596	-1.563	0.118064
## subcategorySubcategory 94	91.6680	56.3473	1.627	0.103775
## subcategorySubcategory 95	-134.9117	326.0410	-0.414	0.679031
## subcategorySubcategory 96	302.7384	91.5729	3.306	0.000947 ***
## subcategorySubcategory 97	-154.0841	267.9134	-0.575	0.565207
## subcategorySubcategory 99	-42.5755	106.6420	-0.399	0.689719
## problem_id	NA	NA	NA	NA

```

## impact2 - Medium           -109.1748  131.5351 -0.830 0.406538
## impact3 - Low              -162.8119  152.4692 -1.068 0.285598
## urgency2 - Medium          -107.4490  129.9008 -0.827 0.408147
## urgency3 - Low              -281.5964  134.0200 -2.101 0.035630 *
## priority2 - High             90.2048  131.3597  0.687 0.492273
## priority3 - Moderate         275.3876  260.8352  1.056 0.291066
## priority4 - Low              518.3824  280.6429  1.847 0.064732 .
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 455.1 on 91462 degrees of freedom
## Multiple R-squared:  0.1442, Adjusted R-squared:  0.1417
## F-statistic: 57.71 on 267 and 91462 DF,  p-value: < 2.2e-16

lm_full_data_hours_v4 <- lm(resolved_updated_diff_hours ~ incident_state + reassignment_count + reopen_
summary(lm_full_data_hours_v4)

```

```

##
## Call:
## lm(formula = resolved_updated_diff_hours ~ incident_state + reassignment_count +
##      reopen_count + made_sla + reopen_count + problem_id + impact +
##      urgency + priority, data = df_train)
##
## Residuals:
##    Min      1Q  Median      3Q     Max
## -1089.8 -177.3   -97.7    0.0  7892.7
##
## Coefficients: (1 not defined because of singularities)
##                               Estimate Std. Error t value Pr(>|t|)
## (Intercept)                 -51.5211  339.3516 -0.152  0.8793
## incident_stateAwaiting Evidence  546.5259   86.1276  6.346 2.23e-10 ***
## incident_stateAwaiting Problem  384.5763   25.0319 15.363 < 2e-16 ***
## incident_stateAwaiting User Info 36.8616   5.2165  7.066 1.60e-12 ***
## incident_stateAwaiting Vendor  820.3208  20.8709 39.305 < 2e-16 ***
## incident_stateNew            21.4925   3.9929  5.383 7.36e-08 ***
## incident_stateResolved       -177.3844   4.4236 -40.099 < 2e-16 ***
## reassignment_count            4.3075   0.9243  4.661 3.16e-06 ***
## reopen_count                  -4.2616   7.8879 -0.540  0.5890
## made_slaTRUE                  202.5892  339.1175  0.597  0.5502
## problem_id                    NA        NA      NA      NA
## impact2 - Medium             -134.3092  137.9375 -0.974  0.3302
## impact3 - Low                -219.3730  159.7138 -1.374  0.1696
## urgency2 - Medium            -136.2519  136.2686 -1.000  0.3174
## urgency3 - Low               -278.3533  140.5441 -1.981  0.0476 *
## priority2 - High              94.2539  137.7787  0.684  0.4939
## priority3 - Moderate          296.8325  273.6289  1.085  0.2780
## priority4 - Low               590.2604  294.1833  2.006  0.0448 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 479.3 on 91713 degrees of freedom
## Multiple R-squared:  0.04834, Adjusted R-squared:  0.04818
## F-statistic: 291.2 on 16 and 91713 DF,  p-value: < 2.2e-16

```