

# Anàlisi Descriptiu Bivariant Preprocessat

2024-02-24

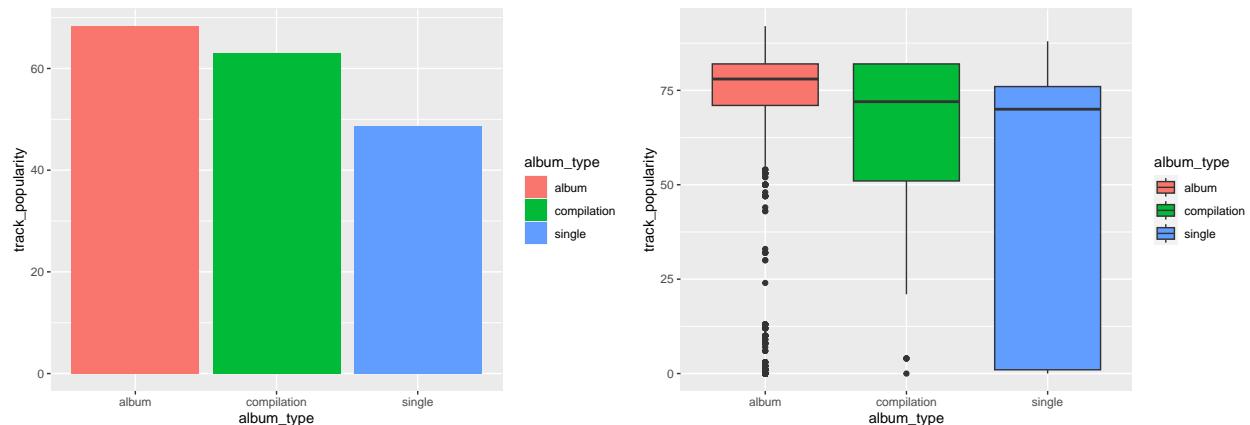
Per fer el anàlisi bivariant després del preprocessament, s'han analitzat parells de diferents tipus de variables per observar si hi ha relacions entre variables:

```
## [1] "track_name"      "track_popularity"   "album_name"
## [4] "album_type"       "album_label"        "album_popularity"
## [7] "artist_num"        "artist_name"        "artist_followers"
## [10] "artist_popularity" "pop"                 "hip_hop"
## [13] "rock"              "electro"             "christmas"
## [16] "cinema"            "latino"              "collab"
## [19] "explicit"          "danceability"       "energy"
## [22] "key"               "major_mode"         "time_signature"
## [25] "loudness"           "speechiness"         "acousticness"
## [28] "liveness"           "valence"             "tempo"
## [31] "duration"           "streams"              "year_release"
## [34] "month_release"      "day_release"         "weekday_release"
## [37] "year_week"           "month_week"          "week_index"
## [40] "rank_group"          "nationality"         "city"
## [43] "gender"              "is_group"             "lyrics"
```

## 1. Una numèrica i una categòrica

Per veure la influència d'una variable categòrica a una numèrica, fem un anàlisi descriptiu de la variable numèrica per cada categoria de la categòrica i també ho vistualitzam amb barplots i boxplots:

[1] "track\_popularity and album\_type"

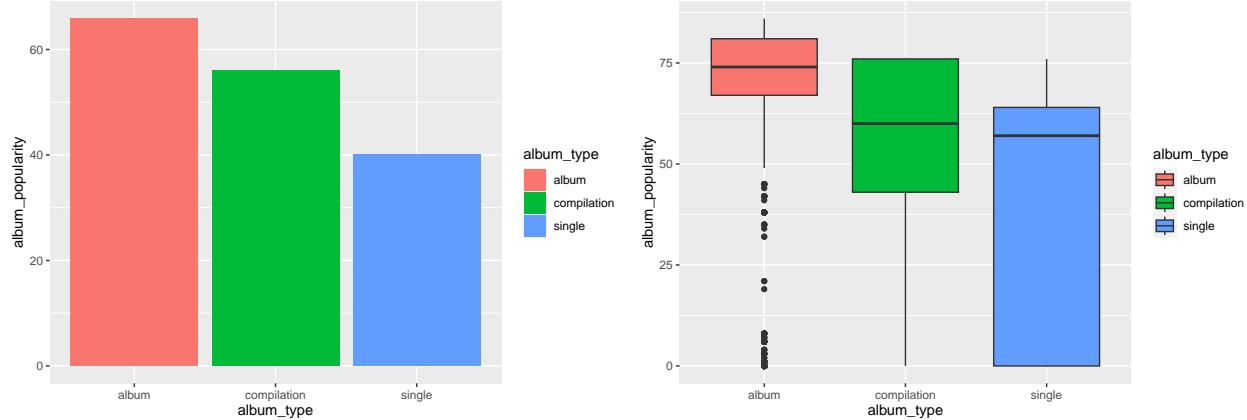


```
Descriptive statistics by group
group: album
vars     n    mean     sd median trimmed  mad min max range skew kurtosis    se
X1     1 4217 68.32 25.54      78    74.47 7.41    0  92    92 -2.04      2.68 0.39
```

```
group: compilation
  vars   n  mean    sd median trimmed   mad min max range skew kurtosis   se
X1     1 94  63 22.71     72  66.89 14.83    0  82    82 -1.24      0.65 2.34
```

```
group: single
  vars   n  mean    sd median trimmed   mad min max range skew kurtosis   se
X1     1 4524 48.59 33.98     70  50.51 13.34    0  88    88 -0.59     -1.52 0.51
```

```
group: Unknown
NULL
[1] "album_popularity and album_type"
```



Descriptive statistics by group

group: album

```
  vars   n  mean    sd median trimmed   mad min max range skew kurtosis   se
X1     1 4217 65.86 25.13     74  71.71 10.38    0  86    86 -1.95      2.4 0.39
```

group: compilation

```
  vars   n  mean    sd median trimmed   mad min max range skew kurtosis   se
X1     1 94 55.98 22.41     60  59.45 23.72    0  76    76 -1.05      0.15 2.31
```

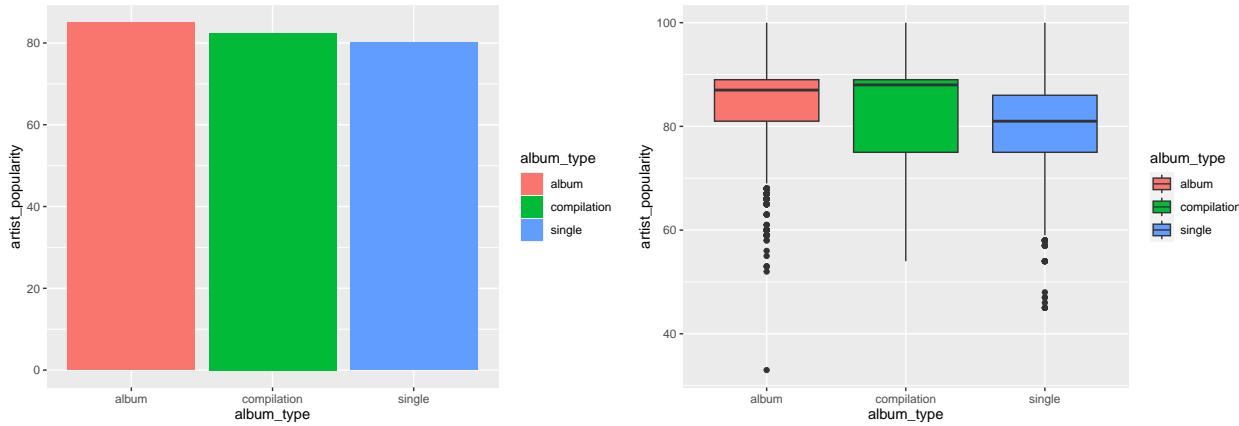
group: single

```
  vars   n  mean    sd median trimmed   mad min max range skew kurtosis   se
X1     1 4524 40.11 29.06     57  41.4 13.34    0  76    76 -0.54     -1.57 0.43
```

group: Unknown

NULL

[1] "artist\_popularity and album\_type"



#### Descriptive statistics by group

group: album

```
vars   n  mean   sd median trimmed mad min max range skew kurtosis    se
X1    1 4217 84.97 7.5      87   85.53 5.93  33 100     67 -0.95     1.83 0.12
```

group: compilation

```
vars   n  mean   sd median trimmed mad min max range skew kurtosis    se
X1    1  94 82.43 11.75     88   83.32 5.93  54 100     46 -0.7      0 1.21
```

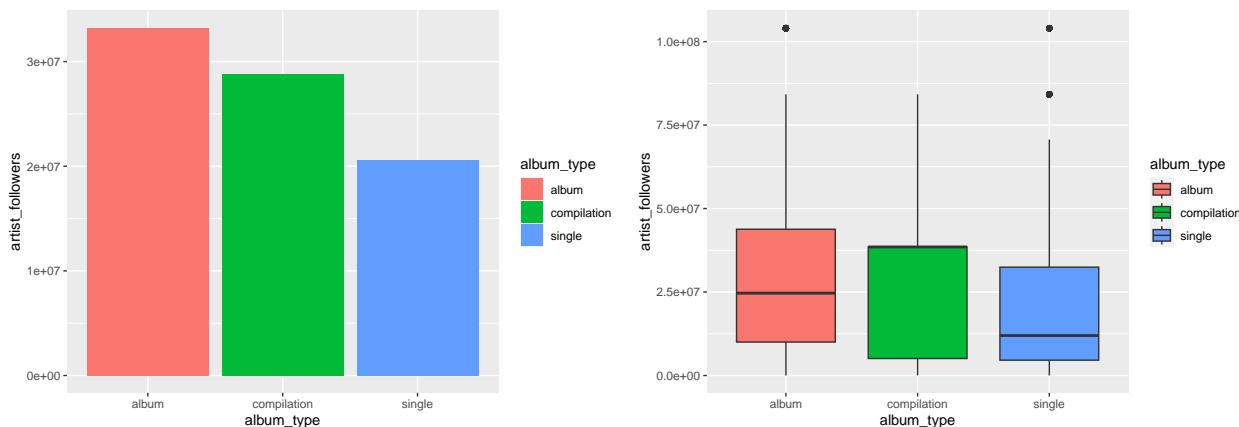
group: single

```
vars   n  mean   sd median trimmed mad min max range skew kurtosis    se
X1    1 4524 80.06 8.71     81   80.47 8.9   45 100     55 -0.43     0.28 0.13
```

group: Unknown

NULL

```
[1] "artist_followers and album_type"
```



#### Descriptive statistics by group

group: album

```
vars   n      mean       sd   median   trimmed      mad      min      max
X1    1 4217 33202472 27643911 24661433 29701864 22176126 3805 104059839
          range skew kurtosis      se
X1 104056034 0.97      0.2 425694.2
```

```

group: compilation
  vars   n    mean      sd   median trimmed     mad   min    max   range
X1     1 94 28841517 19964596 38503280 28453049 14698015 25288 84227300 84202012
      skew kurtosis      se
X1 -0.06    -0.91 2059191

```

```

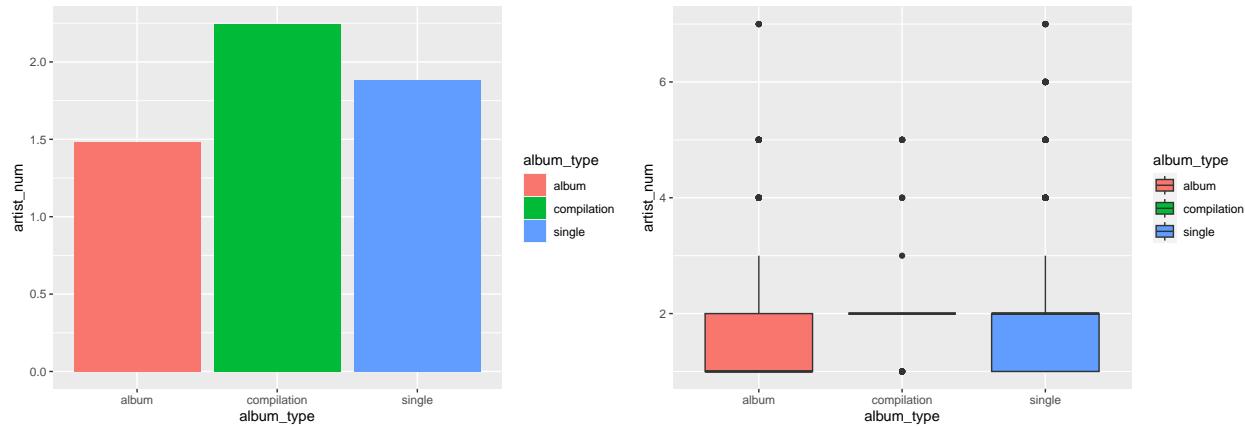
group: single
  vars   n    mean      sd   median trimmed     mad   min    max   range
X1     1 4524 20612102 21790993 11969882 16721895 15124573 14787 104059839
      skew kurtosis      se
X1 104045052 1.44     1.66 323978.2

```

```
group: Unknown
```

```
NULL
```

```
[1] "artist_num and album_type"
```



```
Descriptive statistics by group
```

```
group: album
```

```
  vars   n   mean   sd median trimmed   mad   min   max   range skew kurtosis   se
X1     1 4217 1.48 0.8      1     1.31   0   1    7      6 2.19      6.66 0.01
```

```
group: compilation
```

```
  vars   n   mean   sd median trimmed   mad   min   max   range skew kurtosis   se
X1     1 94 2.24 1.18      2     2.07   0   1    5      4 1.39      0.95 0.12
```

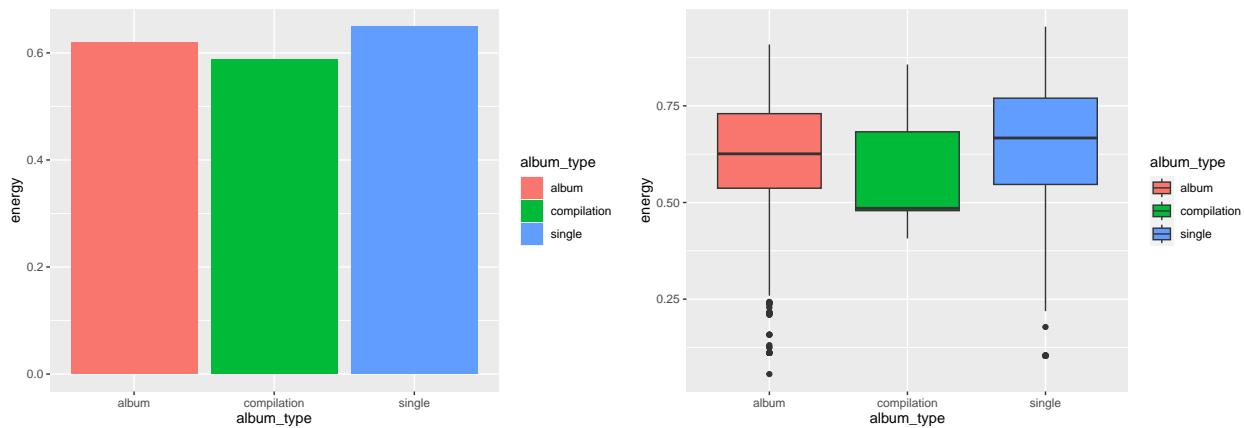
```
group: single
```

```
  vars   n   mean   sd median trimmed   mad   min   max   range skew kurtosis   se
X1     1 4524 1.88 0.95      2     1.74 1.48   1    7      6 1.67      4.19 0.01
```

```
group: Unknown
```

```
NULL
```

```
[1] "energy and album_type"
```



#### Descriptive statistics by group

group: album

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	4217	0.62	0.15	0.63	0.63	0.15	0.06	0.91	0.85	-0.44	-0.17	0

group: compilation

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	94	0.59	0.13	0.48	0.58	0.09	0.41	0.86	0.45	0.47	-1.31	0.01

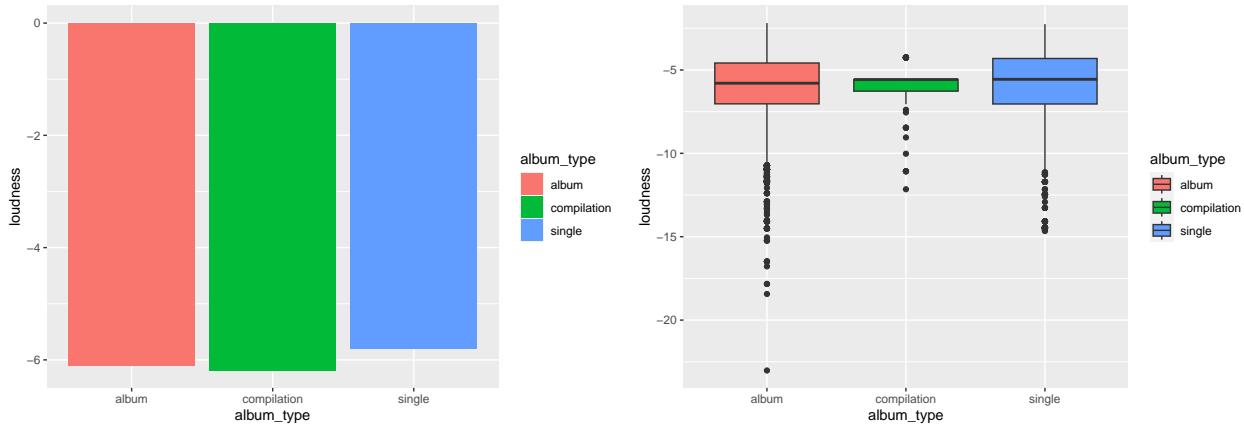
group: single

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	4524	0.65	0.15	0.67	0.66	0.16	0.1	0.96	0.85	-0.61	0.13	0

group: Unknown

NULL

[1] "loudness and album\_type"



#### Descriptive statistics by group

group: album

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	4217	-6.11	2.2	-5.79	-5.89	1.8	-23.02	-2.19	20.84	-1.25	2.82	
	se												
X1	0.03												

```

group: compilation
  vars   n  mean    sd median trimmed   mad    min    max range skew kurtosis
X1      1 94 -6.19 1.62  -5.57   -5.93 1.03 -12.15 -4.26   7.9 -1.78     3.42
       se
X1 0.17

```

```

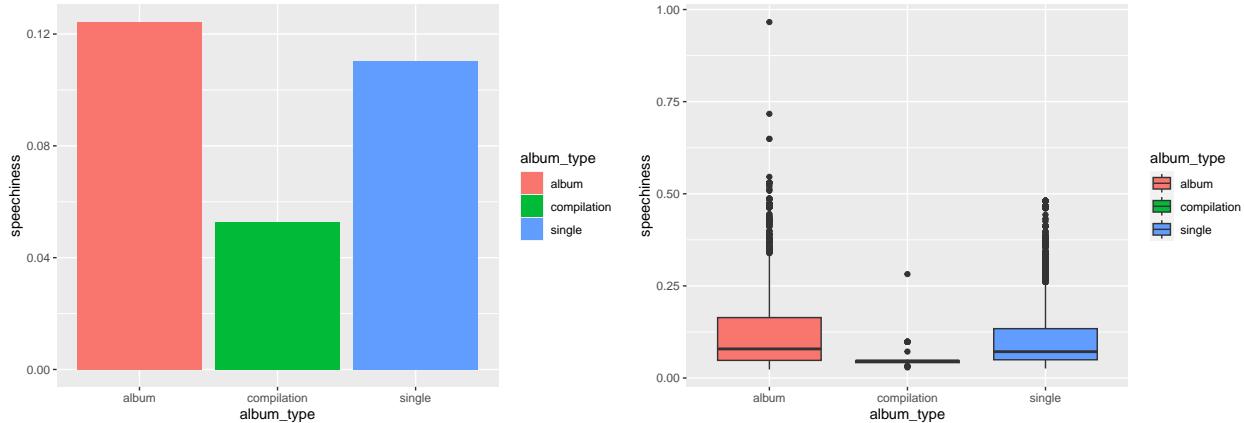
group: single
  vars   n  mean    sd median trimmed   mad    min    max range skew kurtosis
X1      1 4524 -5.8 2.08  -5.56   -5.63 1.99 -14.66 -2.25 12.41 -1.16     2.44
       se
X1 0.03

```

```

group: Unknown
NULL
[1] "speechiness and album_type"

```



```

Descriptive statistics by group
group: album

```

```

  vars   n  mean    sd median trimmed   mad    min    max range skew kurtosis se
X1      1 4217 0.12 0.11  0.08     0.1 0.06 0.02 0.97  0.94  1.6     2.31  0

```

```

group: compilation

```

```

  vars   n  mean    sd median trimmed   mad    min    max range skew kurtosis se
X1      1 94 0.05 0.03  0.05     0.05 0 0.03 0.28  0.25  5.02    33.1  0

```

```

group: single

```

```

  vars   n  mean    sd median trimmed   mad    min    max range skew kurtosis se
X1      1 4524 0.11 0.09  0.07     0.09 0.04 0.03 0.48  0.46  1.75    2.54  0

```

```

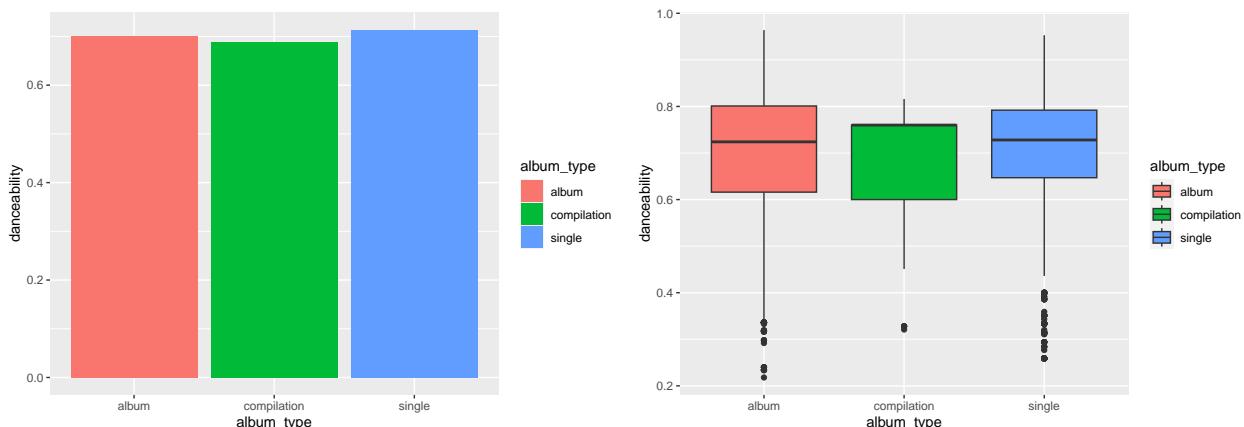
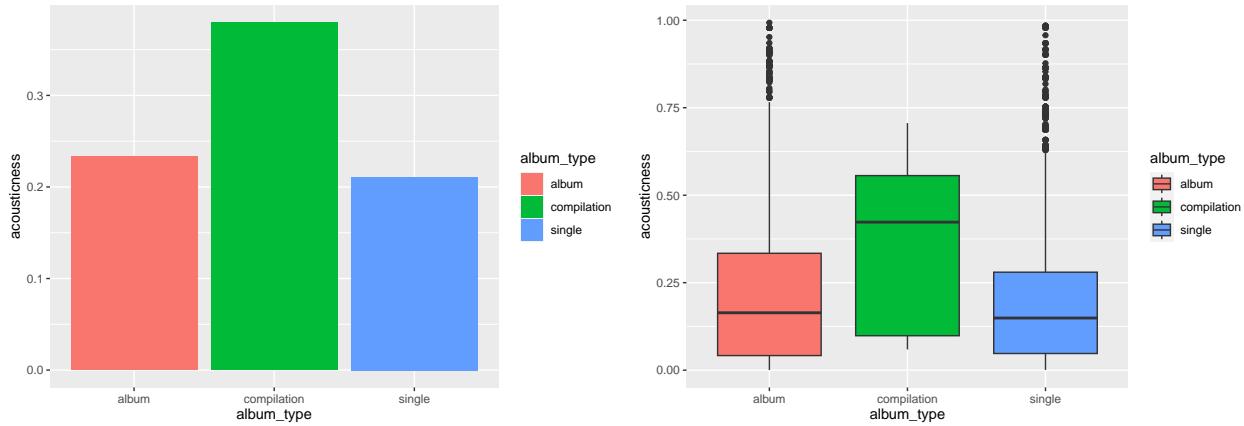
group: Unknown
NULL

```

```

[1] "acousticness and album_type"

```



```
X1      1 94 0.69 0.13    0.76    0.71 0.03 0.32 0.82  0.49 -1.42      0.89 0.01
```

---

```
group: single
```

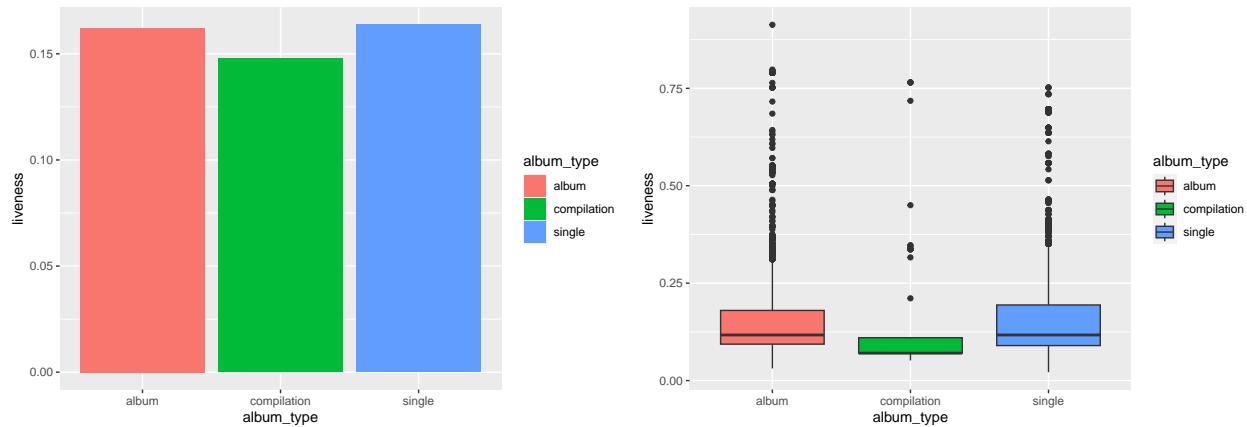
```
vars   n mean   sd median trimmed mad min max range skew kurtosis se
X1     1 4524 0.71 0.12    0.73    0.72 0.1 0.26 0.95  0.69 -0.8     1.14 0
```

---

```
group: Unknown
```

```
NULL
```

```
[1] "liveness and album_type"
```



```
Descriptive statistics by group
```

```
group: album
```

```
vars   n mean   sd median trimmed mad min max range skew kurtosis se
X1     1 4217 0.16 0.12    0.12    0.14 0.04 0.03 0.91  0.88 2.68     9.18 0
```

---

```
group: compilation
```

```
vars   n mean   sd median trimmed mad min max range skew kurtosis se
X1     1 94 0.15 0.17    0.07    0.11 0.03 0.05 0.76  0.71 2.49     5.59 0.02
```

---

```
group: single
```

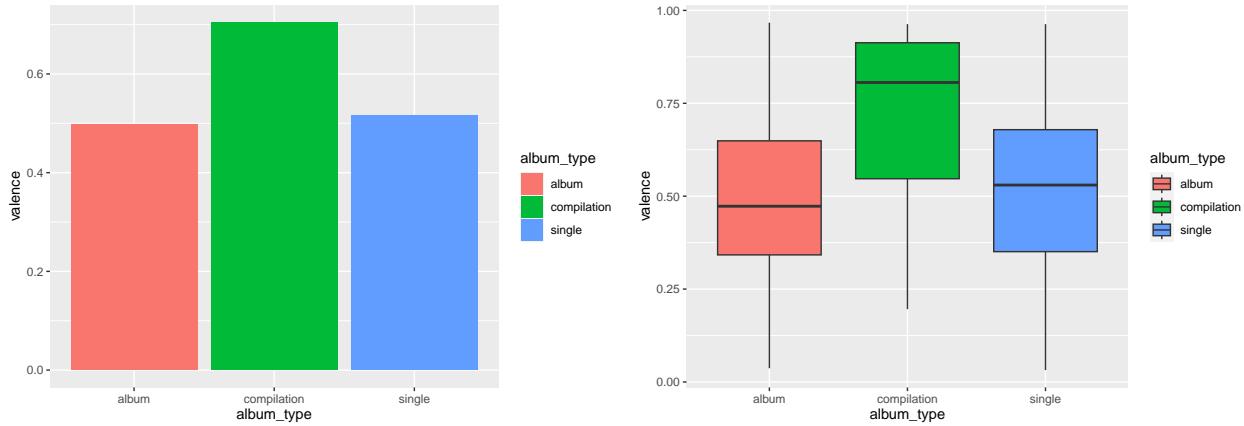
```
vars   n mean   sd median trimmed mad min max range skew kurtosis se
X1     1 4524 0.16 0.12    0.12    0.14 0.06 0.02 0.75  0.73 2.1      5.15 0
```

---

```
group: Unknown
```

```
NULL
```

```
[1] "valence and album_type"
```



#### Descriptive statistics by group

group: album

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	4217	0.5	0.21	0.47	0.49	0.21	0.04	0.97	0.93	0.25	-0.63	0

group: compilation

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	94	0.7	0.23	0.81	0.73	0.19	0.2	0.96	0.77	-0.7	-0.7	0.02

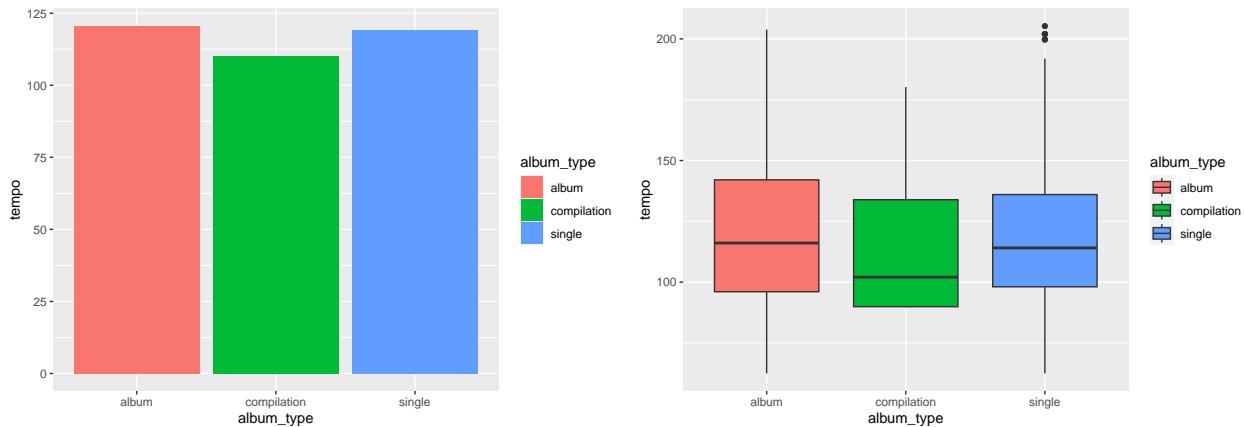
group: single

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	4524	0.52	0.22	0.53	0.52	0.25	0.03	0.96	0.93	-0.12	-0.79	0

group: Unknown

NULL

[1] "tempo and album\_type"



#### Descriptive statistics by group

group: album

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	4217	120.54	29.19	116.07	118.63	30.95	62.45	203.86	141.42	0.5	-0.56	0.45

```

group: compilation
  vars   n   mean     sd median trimmed   mad   min     max range skew kurtosis
X1      1  94 110.22 22.97 102.04   107.8 17.98 89.91 180.22 90.31 0.74    -0.77
      se
X1 2.37

```

```

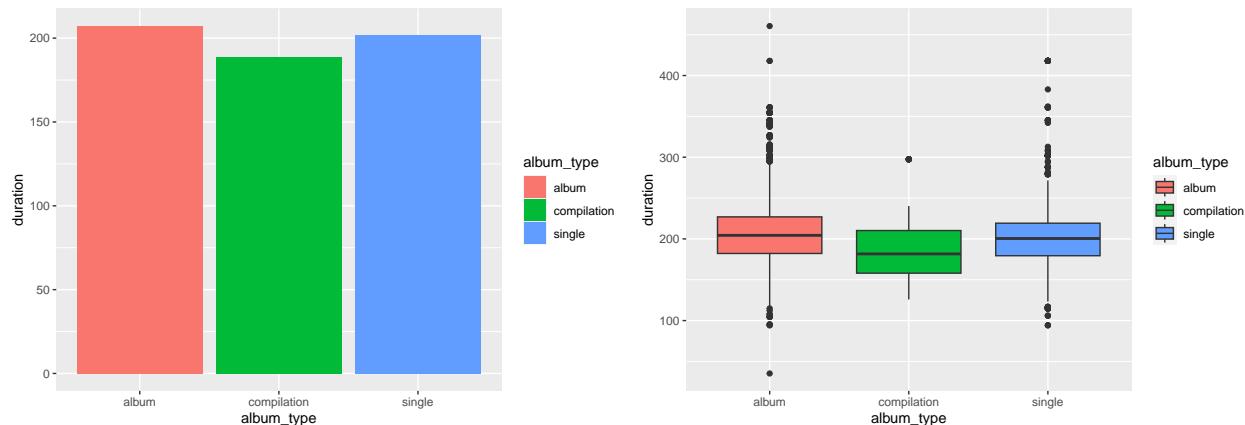
group: single
  vars   n   mean     sd median trimmed   mad   min     max range skew kurtosis
X1      1 4524 119.28 26.9 114.07   116.5 25.21 62.48 205.27 142.79 0.76    -0.14
      se
X1 0.4

```

```

group: Unknown
NULL
[1] "duration and album_type"

```



#### Descriptive statistics by group

```
group: album
```

```

  vars   n   mean     sd median trimmed   mad   min     max range skew kurtosis
X1      1 4217 207.2 40.19 204.35  204.94 32.89 35.24 460.57 425.33 0.8     2.33
      se
X1 0.62

```

```
group: compilation
```

```

  vars   n   mean     sd median trimmed   mad   min     max range skew kurtosis
X1      1  94 188.68 46.45 181.61  181.68 34.95 125.83 297.48 171.66 1.3     0.81
      se
X1 4.79

```

```
group: single
```

```

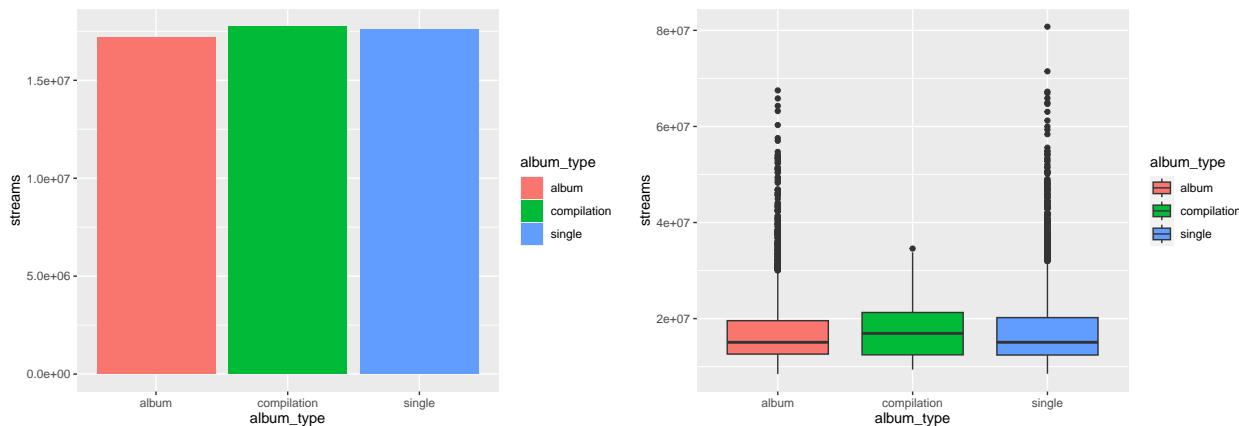
  vars   n   mean     sd median trimmed   mad   min     max range skew kurtosis
X1      1 4524 201.86 36.85 200.48  199.83 29.41 94.25 417.92 323.68 1.51
      kurtosis   se
X1      7.21 0.55

```

```
group: Unknown
```

```
NULL
```

```
[1] "streams and album_type"
```



#### Descriptive statistics by group

group: album

	vars	n	mean	sd	median	trimmed	mad	min	max
X1	1	4217	17194531	6901541	15069378	16019442	4459668	8454914	67499798
			range	skew	kurtosis		se		
X1		59044884	2.28	7.56	106278.2				

group: compilation

	vars	n	mean	sd	median	trimmed	mad	min	max	range
X1	1	94	17737787	5931224	16928918	17111738	6582031	9382981	34579416	25196435
			skew	kurtosis	se					
X1		0.82	0.12	611759						

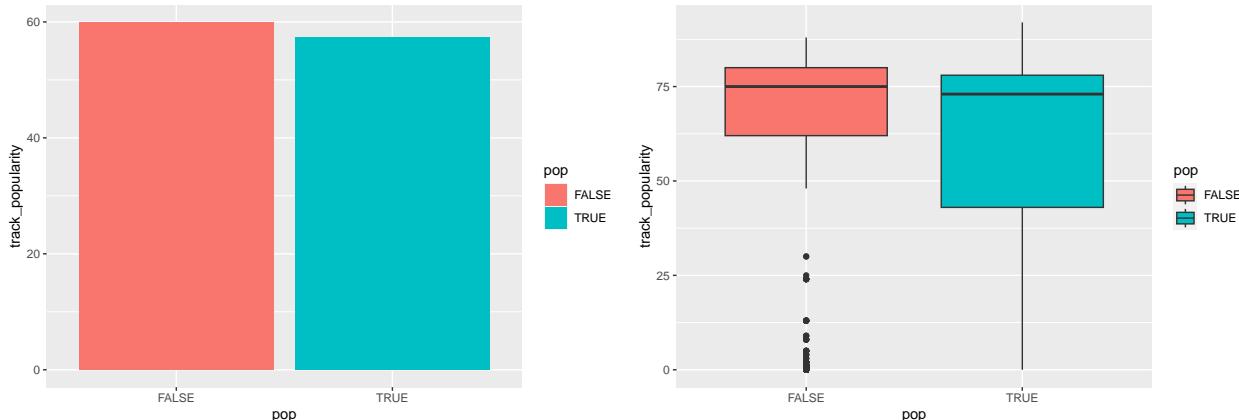
group: single

	vars	n	mean	sd	median	trimmed	mad	min	max
X1	1	4524	17592692	7611489	15069035	16235214	4747267	8509565	80764045
			range	skew	kurtosis	se			
X1		72254480	2.25	7.31	113164				

group: Unknown

NULL

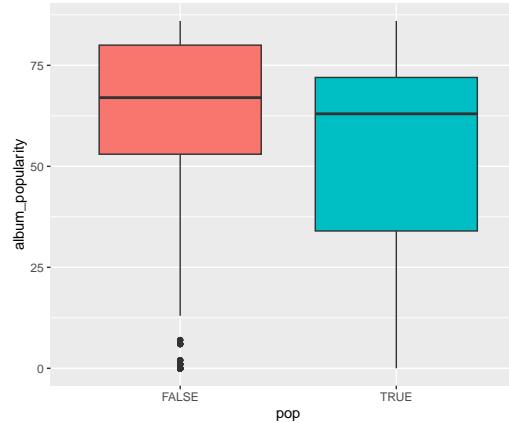
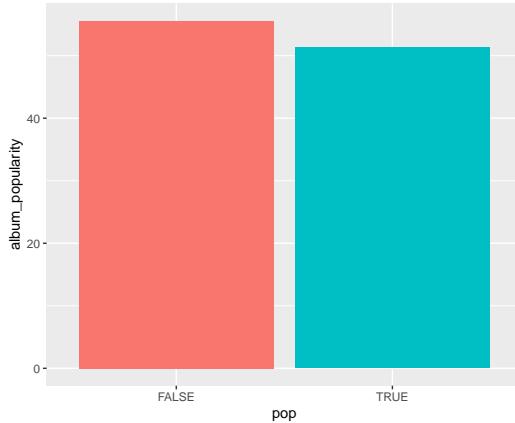
[1] "track\_popularity and album\_type"



#### Descriptive statistics by group

```
group: FALSE
  vars   n  mean    sd median trimmed   mad min max range skew kurtosis   se
X1     1 2599 59.92 31.83      75   64.35 10.38    0  88    88 -1.24      -0.3 0.62
```

```
group: TRUE
  vars   n  mean    sd median trimmed   mad min max range skew kurtosis   se
X1     1 6236 57.43 31.61      73   61.02 11.86    0  92    92 -1.07      -0.62 0.4
[1] "album_popularity and album_type"
```



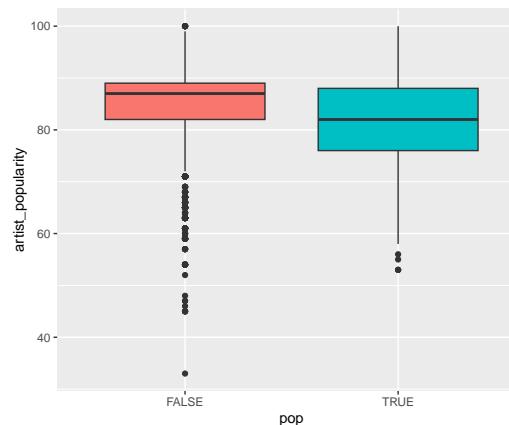
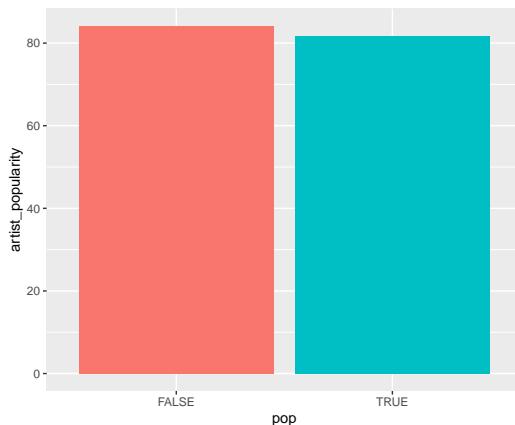
#### Descriptive statistics by group

```
group: FALSE
```

```
  vars   n  mean    sd median trimmed   mad min max range skew kurtosis   se
X1     1 2599 55.56 30.63      67   58.98 19.27    0  86    86 -1.08      -0.5 0.6
```

```
group: TRUE
```

```
  vars   n  mean    sd median trimmed   mad min max range skew kurtosis   se
X1     1 6236 51.32 29.72      63   53.74 16.31    0  86    86 -0.9      -0.79 0.38
[1] "artist_popularity and album_type"
```



#### Descriptive statistics by group

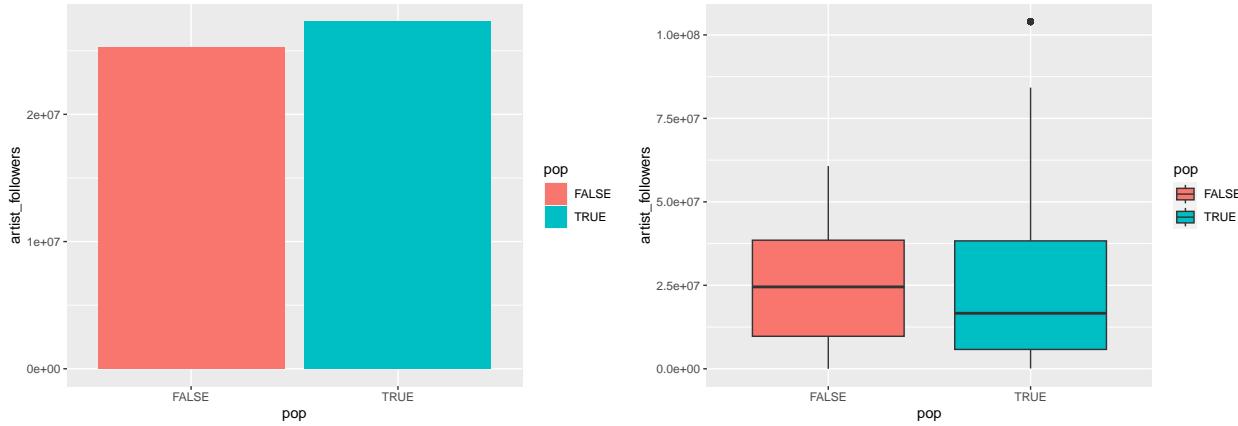
```
group: FALSE
```

```
  vars   n  mean    sd median trimmed   mad min max range skew kurtosis   se
X1     1 2599 84.1  9.17      87   85.12 2.97   33 100    67 -1.27      2.15 0.18
```

```

group: TRUE
vars      n   mean    sd median trimmed mad min max range skew kurtosis   se
X1       1 6236 81.73 8.18      82 82.11 8.9  53 100     47 -0.41      0.04 0.1
[1] "artist_followers and album_type"

```



Descriptive statistics by group

```

group: FALSE
vars      n   mean    sd median trimmed mad min max
X1       1 2599 25272698 17421679 24532656 24247410 20743447 3805 60731551
range skew kurtosis   se
X1 60727746 0.27    -0.9 341733

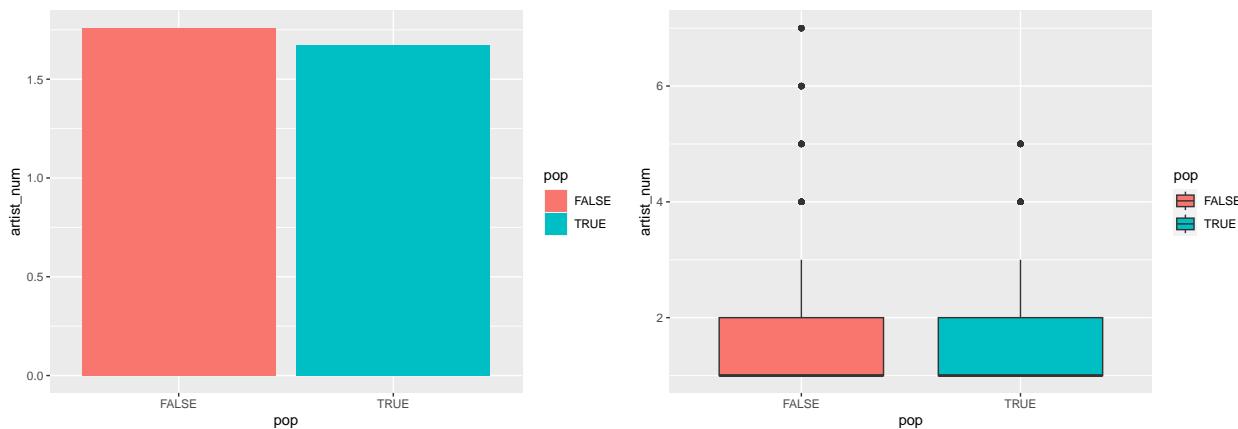
```

group: TRUE

```

vars      n   mean    sd median trimmed mad min max
X1       1 6236 27307783 28195918 16634936 22927096 20242968 104055 104059839
range skew kurtosis   se
X1 103955784 1.2     0.47 357053.4
[1] "artist_num and album_type"

```



Descriptive statistics by group

```

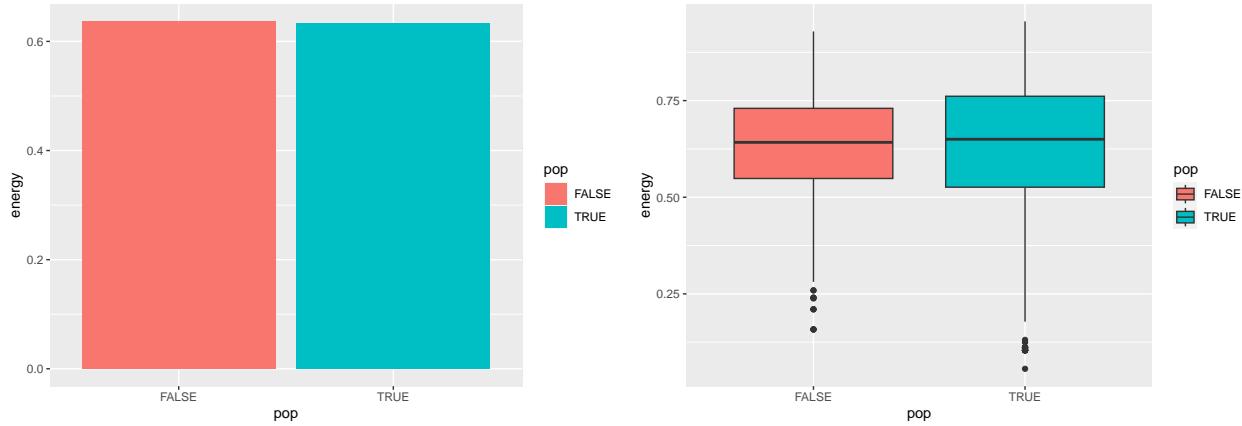
group: FALSE
vars      n   mean    sd median trimmed mad min max range skew kurtosis   se
X1       1 2599 1.76 1.07      1 1.54  0   1    7     6  2.2      5.86 0.02

```

```

group: TRUE
  vars   n mean   sd median trimmed mad min max range skew kurtosis   se
X1     1 6236 1.67 0.83      1    1.53  0   1   5     4 1.38      2.12 0.01
[1] "energy and album_type"

```



#### Descriptive statistics by group

group: FALSE

```

  vars   n mean   sd median trimmed mad min max range skew kurtosis   se
X1     1 2599 0.64 0.13      0.64    0.64  0.14 0.16 0.93  0.77 -0.4      -0.04 0

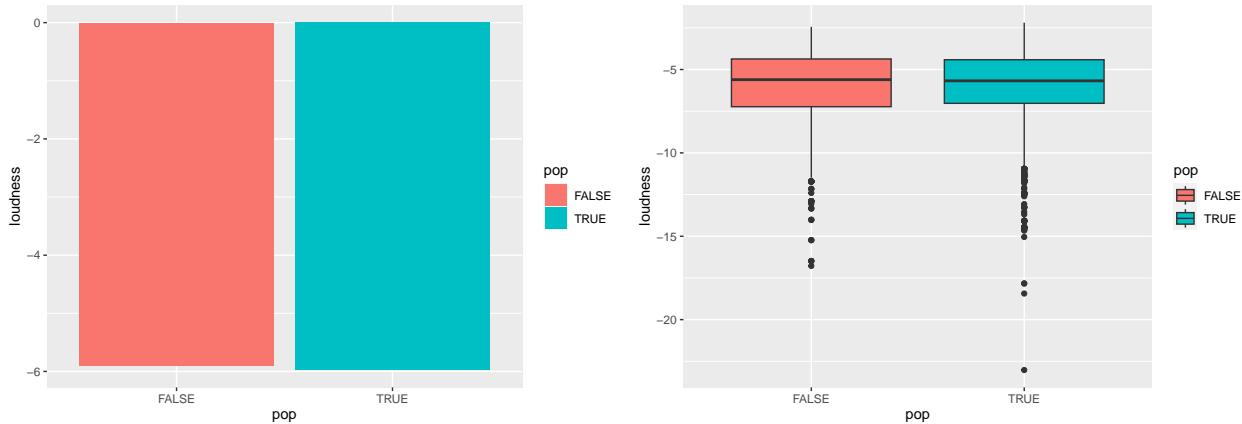
```

group: TRUE

```

  vars   n mean   sd median trimmed mad min max range skew kurtosis   se
X1     1 6236 0.63 0.15      0.65    0.64  0.17 0.06 0.96  0.9 -0.52      -0.15 0
[1] "loudness and album_type"

```



#### Descriptive statistics by group

group: FALSE

```

  vars   n mean   sd median trimmed mad min max range skew kurtosis   se
X1     1 2599 -5.9 2.06   -5.61   -5.73 1.93 -16.78 -2.44 14.34   -1      1.84
      se
X1  0.04

```

group: TRUE

```

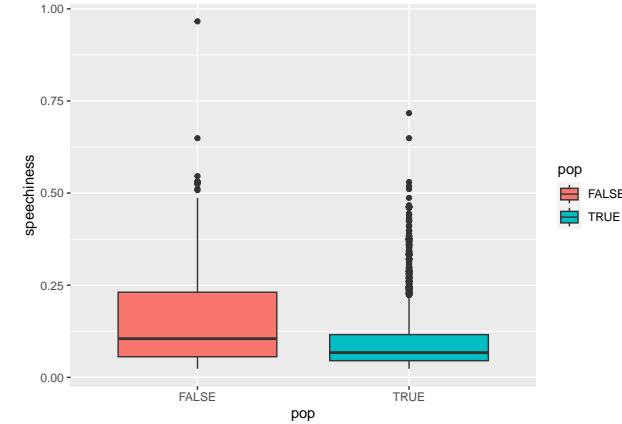
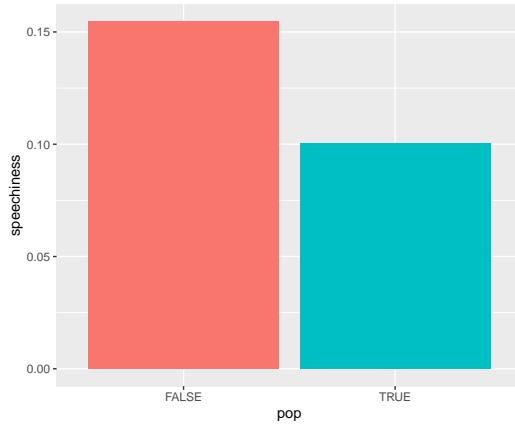
  vars   n mean   sd median trimmed mad min max range skew kurtosis

```

```

X1      1 6236 -5.98 2.17  -5.68   -5.76 1.9 -23.02 -2.19 20.84 -1.28      2.95
      se
X1  0.03
[1] "speechiness and album_type"

```



Descriptive statistics by group  
group: FALSE

```

vars      n mean    sd median trimmed mad min max range skew kurtosis se
X1      1 2599 0.15 0.12     0.1    0.14 0.09 0.02 0.97 0.94 1.09      0.7 0

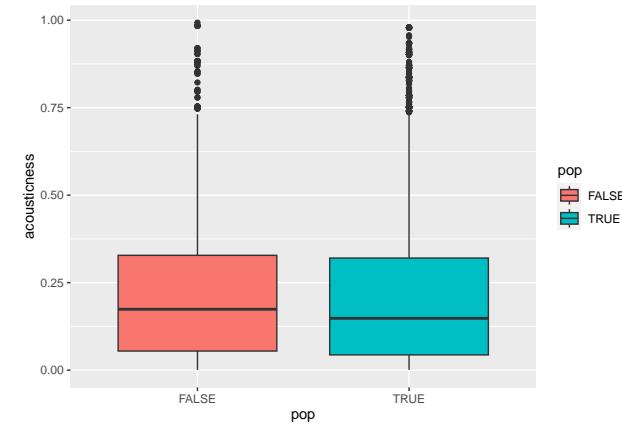
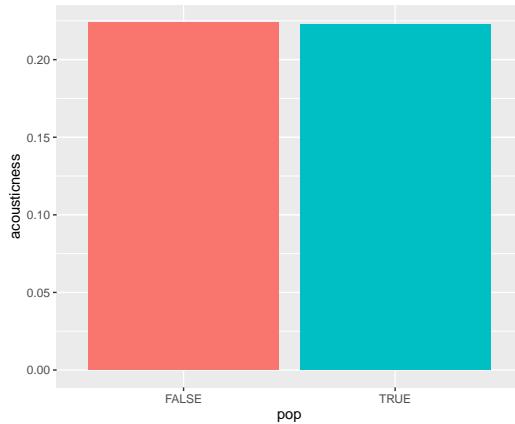
```

group: TRUE

```

vars      n mean    sd median trimmed mad min max range skew kurtosis se
X1      1 6236 0.1 0.09     0.07    0.08 0.04 0.02 0.72 0.69 2.06      4.21 0
[1] "acousticness and album_type"

```



Descriptive statistics by group  
group: FALSE

```

vars      n mean    sd median trimmed mad min max range skew kurtosis se
X1      1 2599 0.22 0.21     0.17    0.19 0.18  0 0.99 0.99 1.14      0.72 0

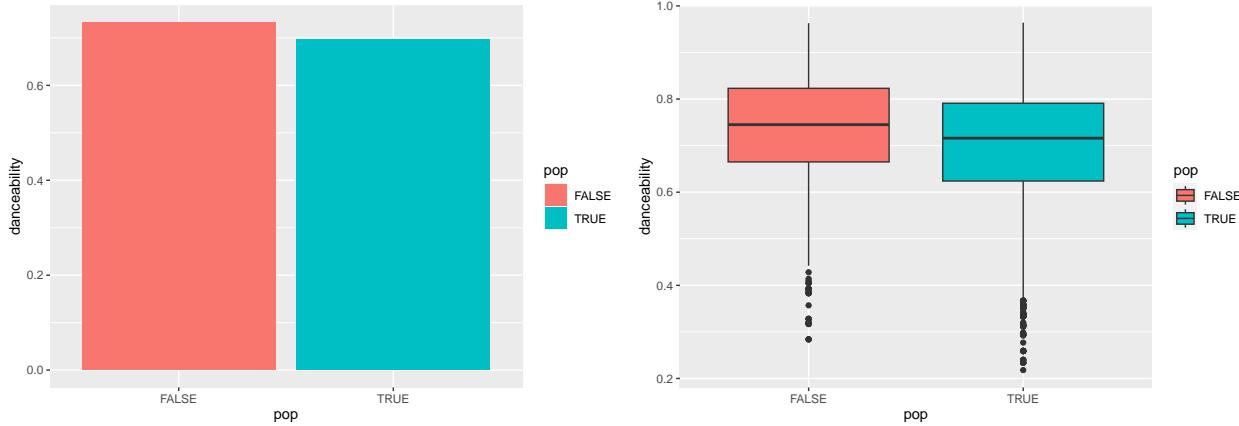
```

group: TRUE

```

vars      n mean    sd median trimmed mad min max range skew kurtosis se
X1      1 6236 0.22 0.23     0.15    0.18 0.17  0 0.98 0.98 1.34      0.95 0
[1] "danceability and album_type"

```



#### Descriptive statistics by group

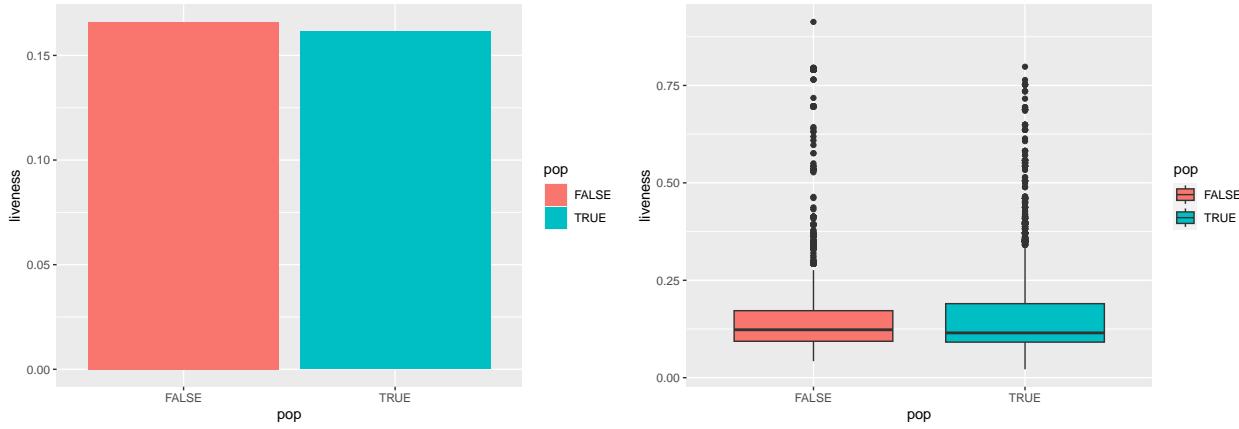
group: FALSE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	2599	0.73	0.12	0.74	0.74	0.74	0.12	0.28	0.96	0.68	-0.62	0.28

group: TRUE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	6236	0.7	0.13	0.72	0.71	0.71	0.12	0.22	0.96	0.75	-0.75	0.55

[1] "liveness and album\_type"



#### Descriptive statistics by group

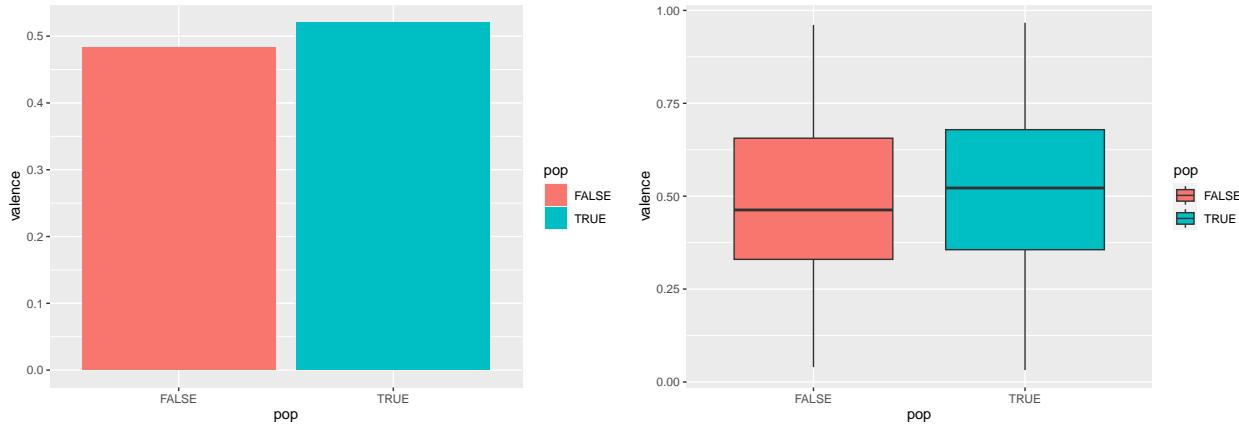
group: FALSE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	2599	0.17	0.14	0.12	0.14	0.14	0.05	0.04	0.91	0.87	2.76	8.48

group: TRUE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	6236	0.16	0.11	0.12	0.14	0.14	0.05	0.02	0.8	0.78	2.01	4.85

[1] "valence and album\_type"



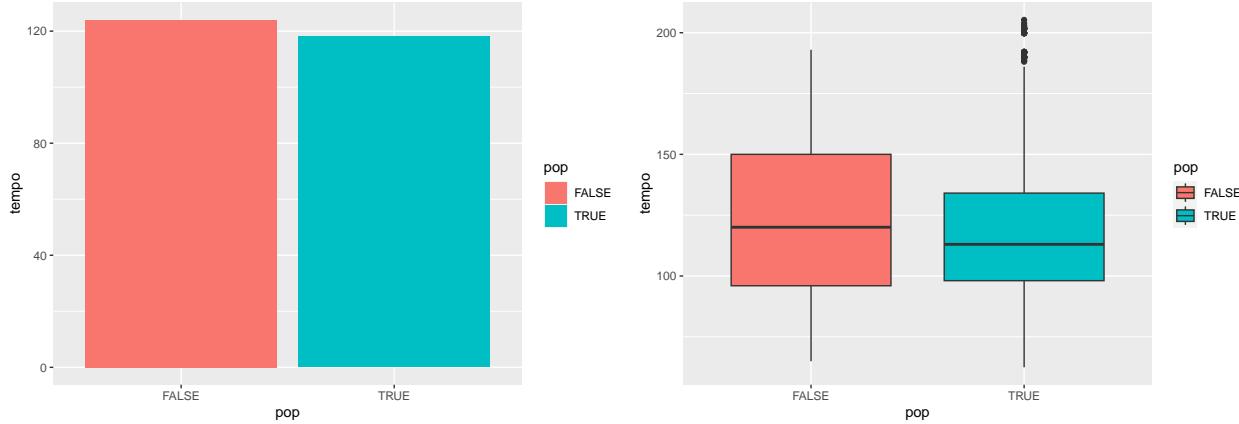
#### Descriptive statistics by group

group: FALSE

```
vars   n  mean   sd median trimmed  mad  min  max range skew kurtosis se
X1     1 2599 0.48 0.21    0.46    0.48 0.24 0.04 0.96 0.92 0.15   -0.72  0
```

group: TRUE

```
vars   n  mean   sd median trimmed  mad  min  max range skew kurtosis se
X1     1 6236 0.52 0.22    0.52    0.52 0.24 0.03 0.97 0.93 0   -0.76  0
[1] "tempo and album_type"
```



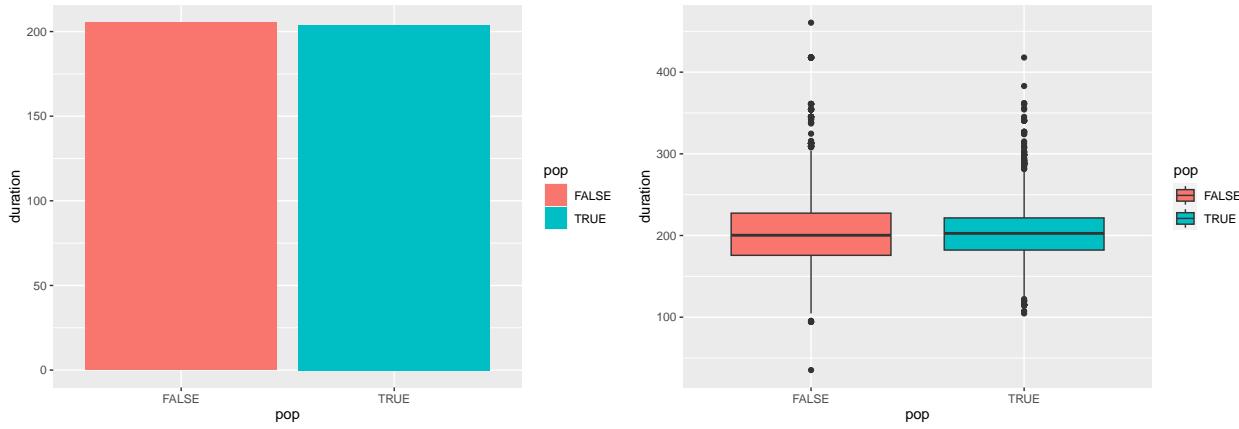
#### Descriptive statistics by group

group: FALSE

```
vars   n  mean   sd median trimmed  mad  min  max range skew
X1     1 2599 124.01 31.97 120.04 122.81 38.54 64.93 193.02 128.08 0.26
      kurtosis   se
X1     -1.17 0.63
```

group: TRUE

```
vars   n  mean   sd median trimmed  mad  min  max range skew
X1     1 6236 118.03 25.97 113.01 115.45 25.07 62.45 205.27 142.83 0.81
      kurtosis   se
X1     0.26 0.33
[1] "duration and album_type"
```



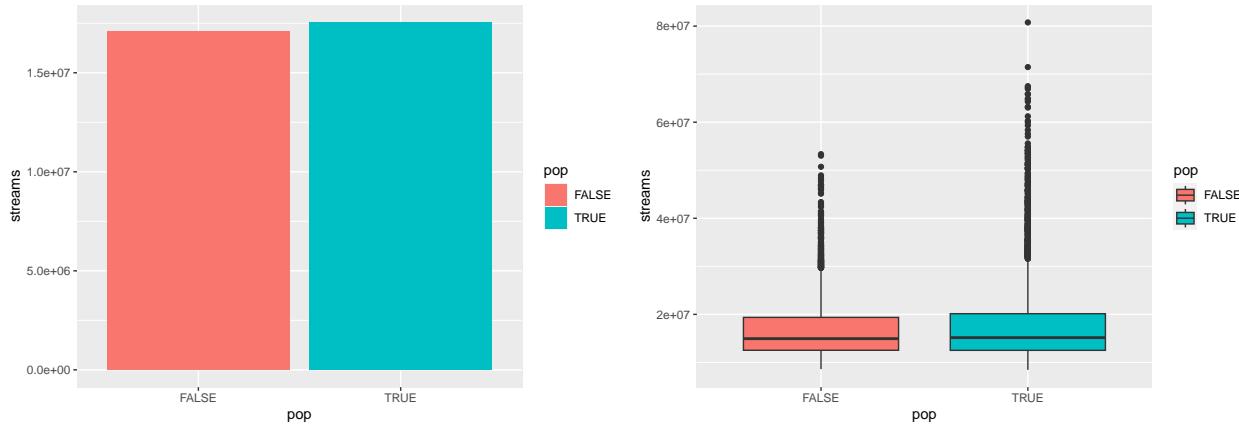
#### Descriptive statistics by group

group: FALSE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew
X1	1	2599	205.25	52.32	200.31	200.42	37.58	35.24	460.57	425.33	1.22
	kurtosis										
X1		2.87	1.03								

group: TRUE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew
X1	1	6236	203.86	31.33	202.62	202.56	28.79	104.59	417.92	313.33	0.58
	kurtosis										
X1		1.8	0.4								
[1]	"streams and album_type"										



#### Descriptive statistics by group

group: FALSE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew
X1	1	2599	17073969	6541160	14947053	15944328	4365218	8602986	53344093		
	kurtosis										
X1		44741107	1.82	3.97	128307.4						

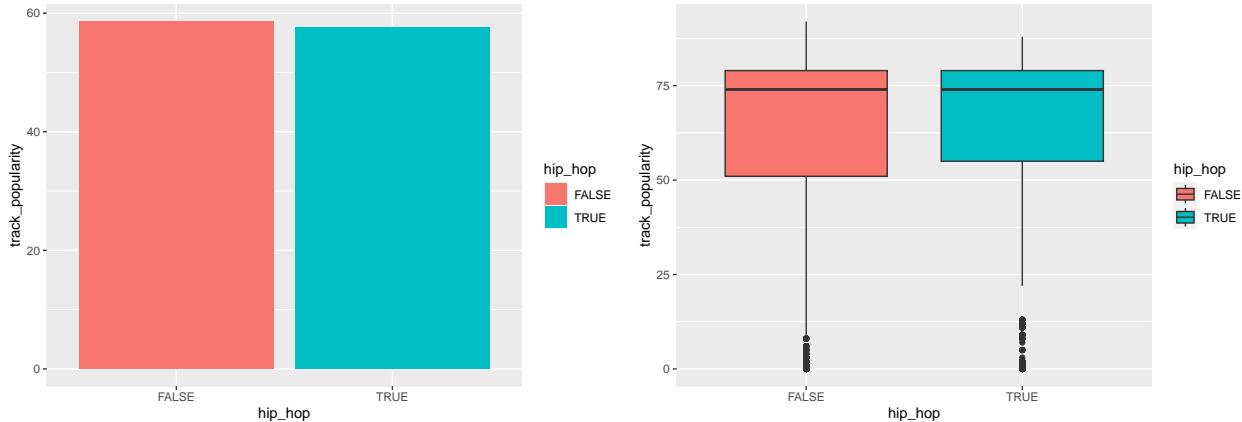
group: TRUE

	vars	n	mean	sd	median	trimmed	mad	min	max
X1	1	6236	17541819	7544777	15163183	16215940	4755941	8454914	80764045

```

range skew kurtosis      se
X1 72309131 2.36     8.07 95541.79
[1] "track_popularity and album_type"

```



```

Descriptive statistics by group
group: FALSE

```

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	4736	58.6	31.81	74	62.39	11.86	0	92	92	-1.11	-0.53	0.46

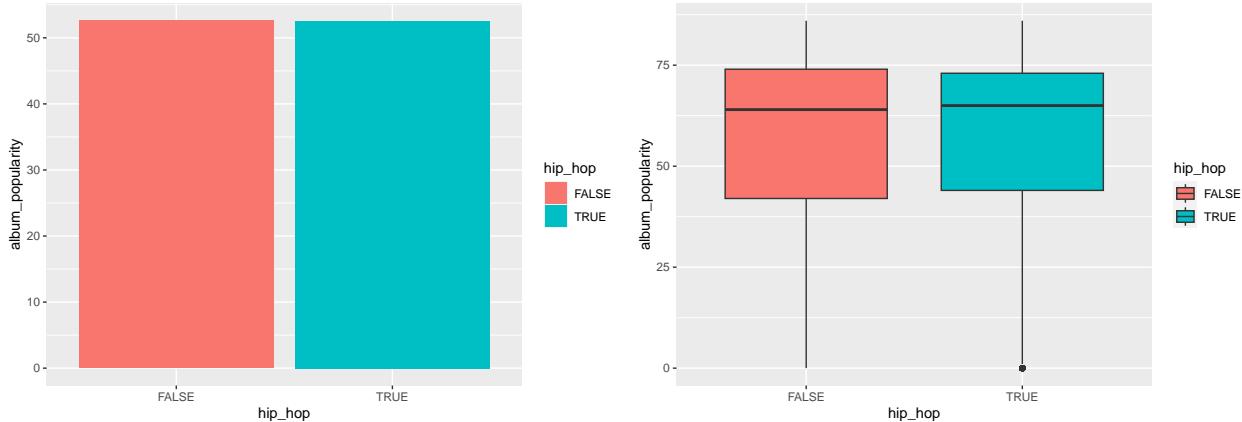
```

group: TRUE

```

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	4099	57.66	31.56	74	61.63	10.38	0	88	88	-1.13	-0.54	0.49

```
[1] "album_popularity and album_type"
```



```

Descriptive statistics by group
group: FALSE

```

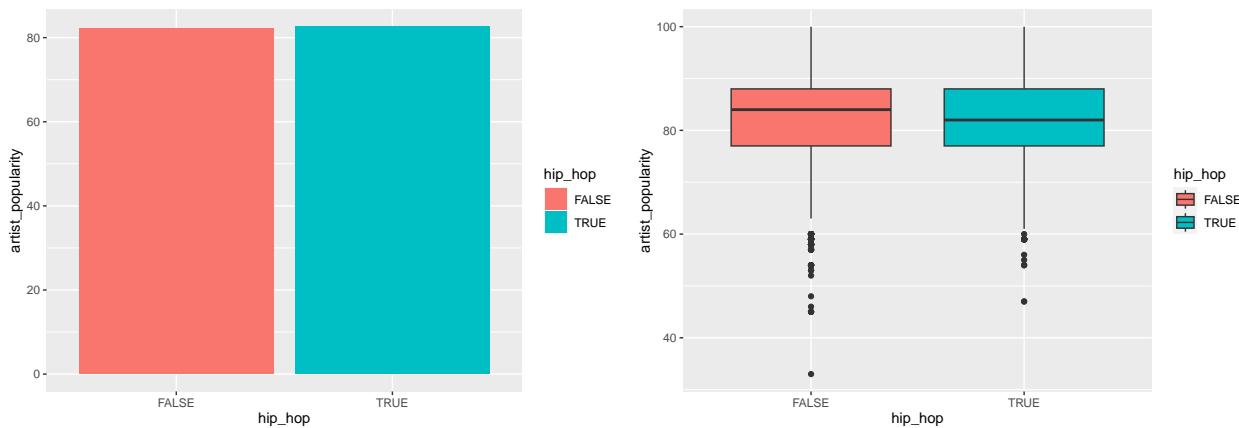
	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	4736	52.59	29.98	64	55.2	16.31	0	86	86	-0.93	-0.72	0.44

```

group: TRUE

```

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	4099	52.55	30.14	65	55.29	16.31	0	86	86	-0.95	-0.72	0.47



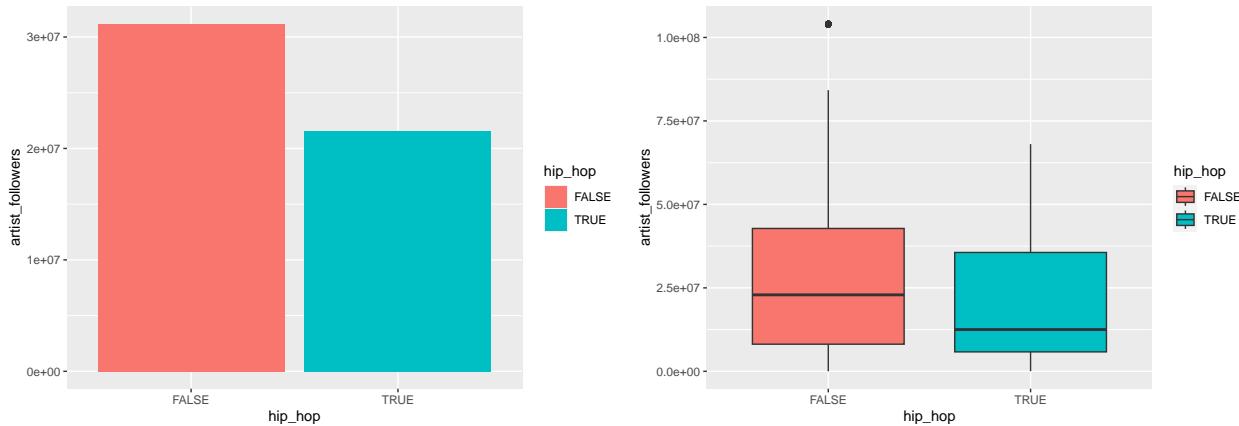
#### Descriptive statistics by group

group: FALSE

```
vars   n   mean    sd median trimmed mad min max range skew kurtosis    se
X1     1 4736 82.27 8.55      84    83.08 7.41   33 100     67 -0.9      1.04 0.12
```

group: TRUE

```
vars   n   mean    sd median trimmed mad min max range skew kurtosis    se
X1     1 4099 82.61 8.55      82    82.89 8.9    47 100     53 -0.4      0.1 0.13
[1] "artist_followers and album_type"
```



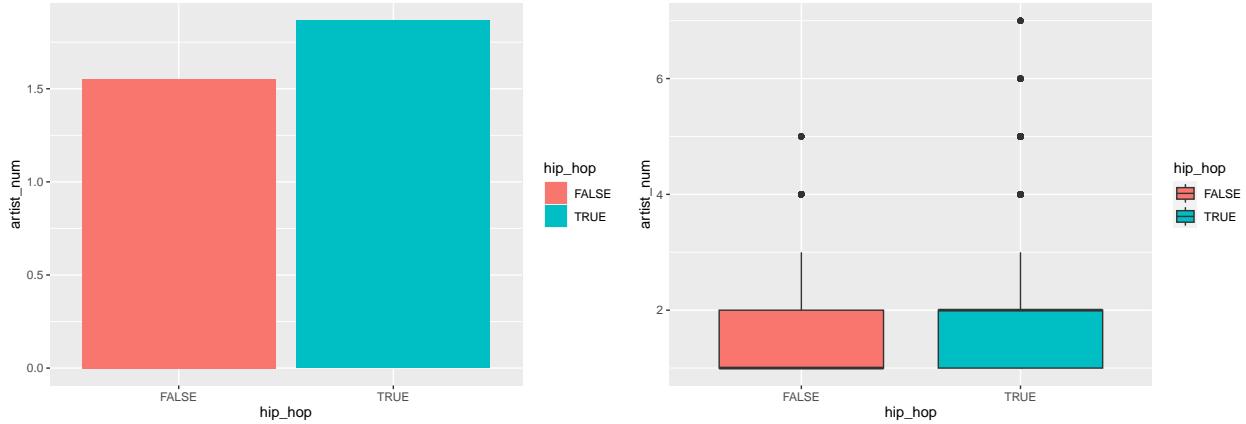
#### Descriptive statistics by group

group: FALSE

```
vars   n   mean    sd median trimmed mad min max range skew kurtosis    se
X1     1 4736 31173515 28926069 22906939 27084184 24747922 3805 104059839
          range skew kurtosis    se
X1 104056034 1.04      0.18 420323.4
```

group: TRUE

```
vars   n   mean    sd median trimmed mad min max range skew kurtosis    se
X1     1 4099 21550942 19683343 12516854 18842601 14900665 42127 68054384
          range skew kurtosis    se
X1 68012257 0.96     -0.11 307439.7
[1] "artist_num and album_type"
```



#### Descriptive statistics by group

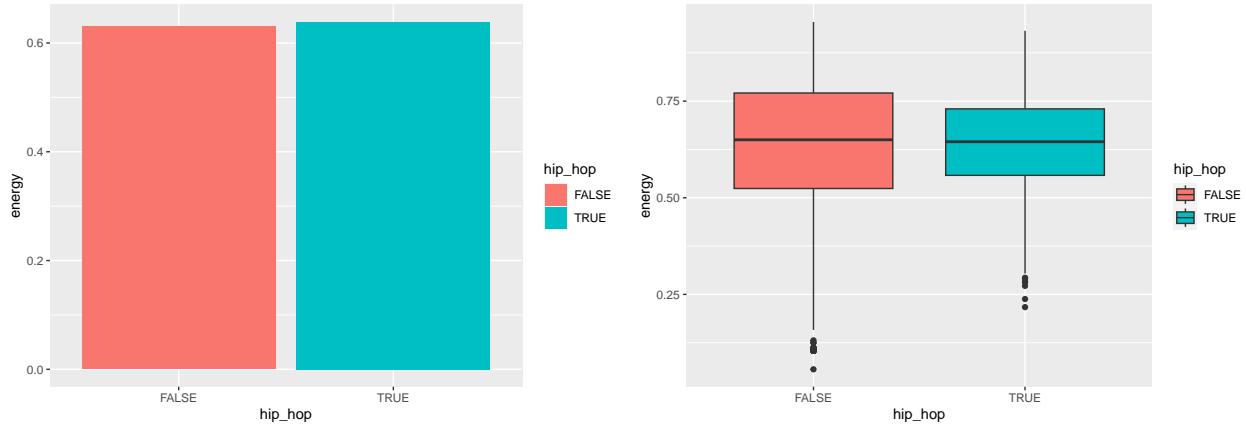
group: FALSE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	4736	1.55	0.73	1	1.43	0	1	5	4	1.47	2.68	0.01

group: TRUE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	4099	1.87	1.05	2	1.68	1.48	1	7	6	1.72	3.77	0.02

[1] "energy and album\_type"



#### Descriptive statistics by group

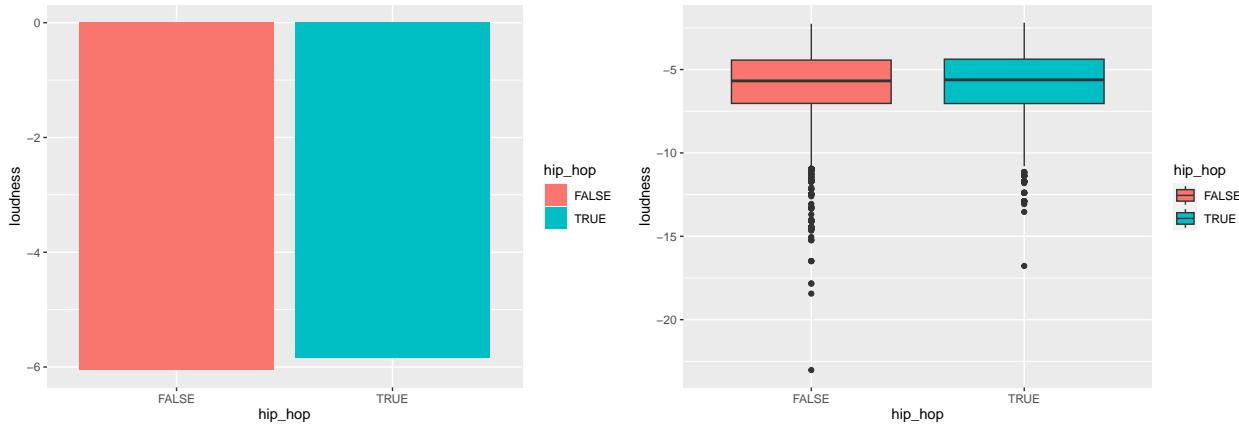
group: FALSE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se	
X1	1	4736	0.63	0.16	0.65	0.64	0.64	0.18	0.06	0.96	0.9	-0.54	-0.22	0

group: TRUE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se	
X1	1	4099	0.64	0.13	0.64	0.64	0.64	0.13	0.22	0.93	0.72	-0.3	-0.41	0

[1] "loudness and album\_type"



#### Descriptive statistics by group

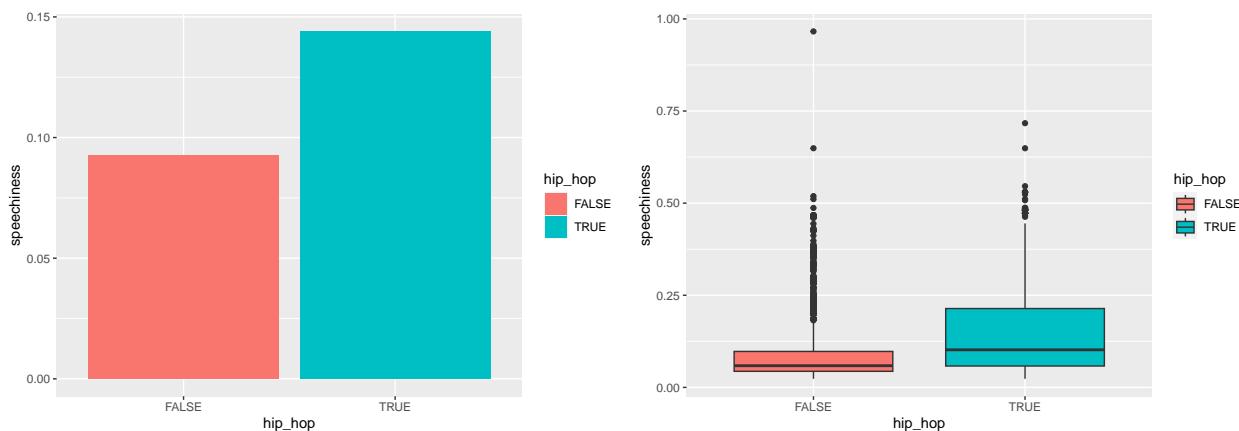
group: FALSE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis
X1	1	4736	-6.05	2.32	-5.68	-5.78	1.9	-23.02	-2.25	20.77	-1.4	3.07
	se											
X1	0.03											

group: TRUE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis
X1	1	4099	-5.84	1.9	-5.62	-5.71	1.97	-16.78	-2.19	14.59	-0.68	0.51
	se											
X1	0.03											

[1] "speechiness and album\_type"



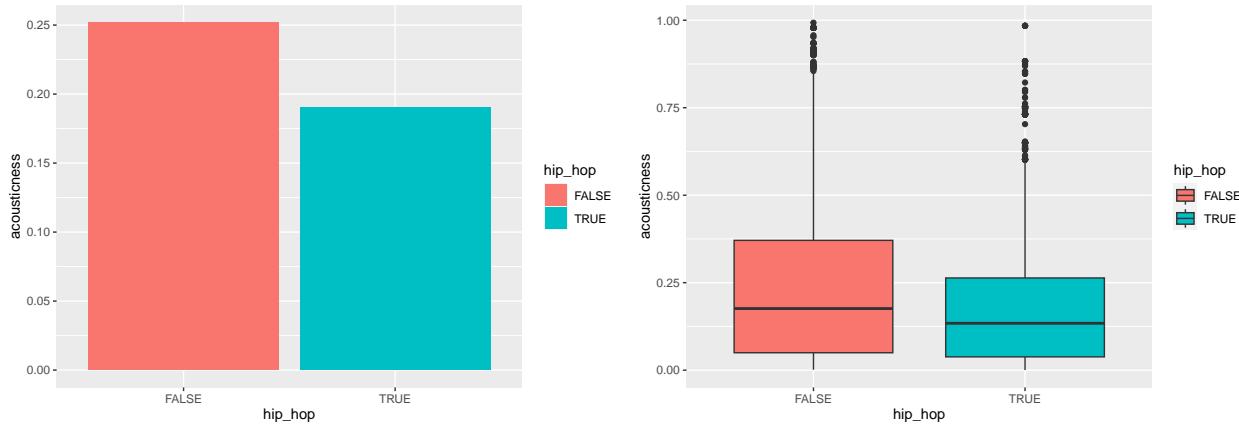
#### Descriptive statistics by group

group: FALSE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	4736	0.09	0.09	0.06	0.07	0.03	0.02	0.97	0.94	2.56	7.7	0
	se												

group: TRUE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	4099	0.14	0.11	0.1	0.13	0.08	0.02	0.72	0.69	1.16	0.62	0
	se												
X1	0.03												

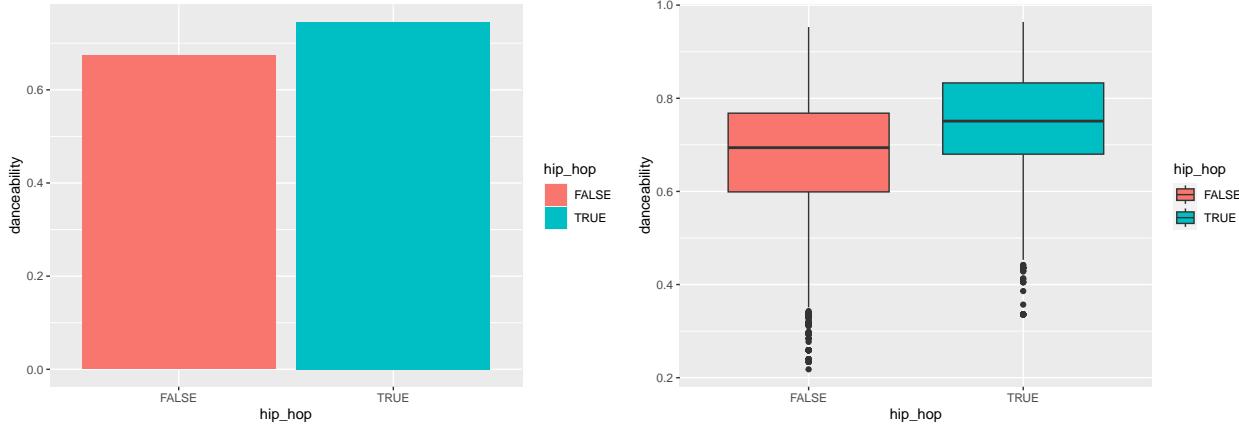


Descriptive statistics by group  
group: FALSE

```
vars      n  mean   sd median trimmed mad min  max range skew kurtosis se
X1      1 4736 0.25 0.25    0.18    0.21 0.2    0 0.99 0.99 1.13    0.23  0
```

group: TRUE

```
vars      n  mean   sd median trimmed mad min  max range skew kurtosis se
X1      1 4099 0.19 0.19    0.13    0.16 0.15    0 0.98 0.98 1.35    1.41  0
[1] "danceability and album_type"
```

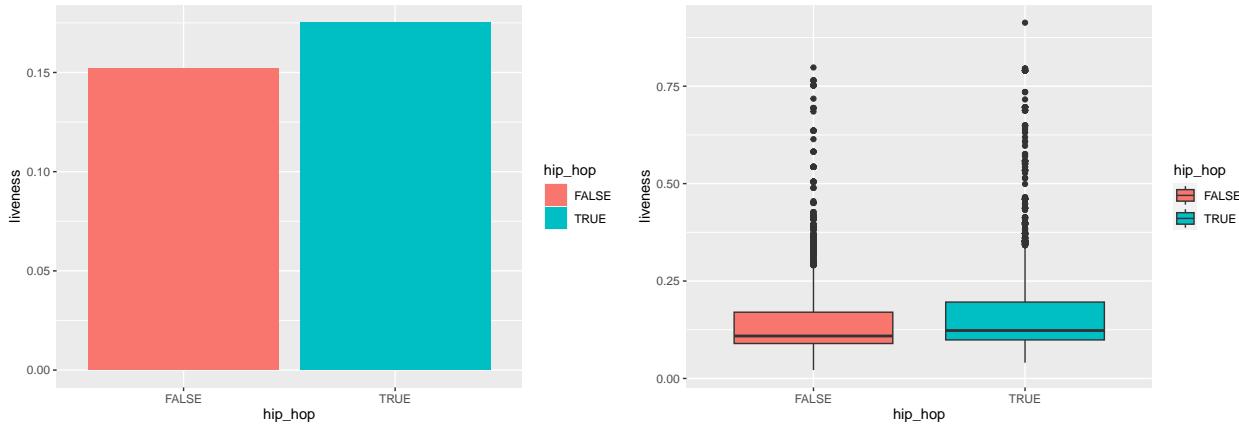


Descriptive statistics by group  
group: FALSE

```
vars      n  mean   sd median trimmed mad min  max range skew kurtosis se
X1      1 4736 0.67 0.13    0.69    0.68 0.13 0.22 0.95 0.74 -0.74    0.39  0
```

group: TRUE

```
vars      n  mean   sd median trimmed mad min  max range skew kurtosis se
X1      1 4099 0.75 0.11    0.75    0.75 0.12 0.34 0.96 0.63 -0.6    0.25  0
[1] "liveness and album_type"
```



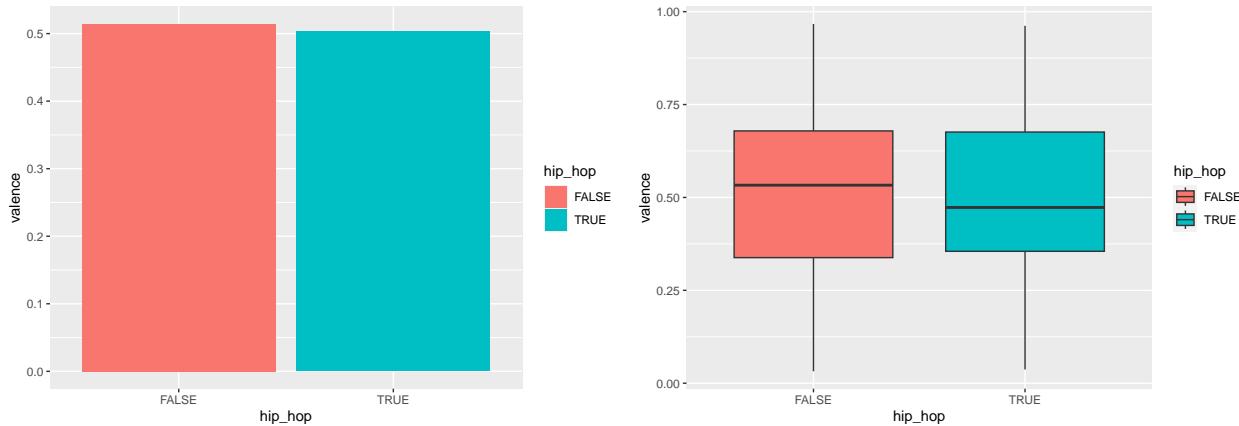
#### Descriptive statistics by group

group: FALSE

```
vars   n mean   sd median trimmed  mad  min max range skew kurtosis se
X1    1 4736 0.15 0.1    0.11    0.13 0.04 0.02 0.8  0.78  2.2     6.46  0
```

group: TRUE

```
vars   n mean   sd median trimmed  mad  min max range skew kurtosis se
X1    1 4099 0.18 0.13   0.12    0.15 0.05 0.04 0.91  0.87  2.31     6.01  0
[1] "valence and album_type"
```



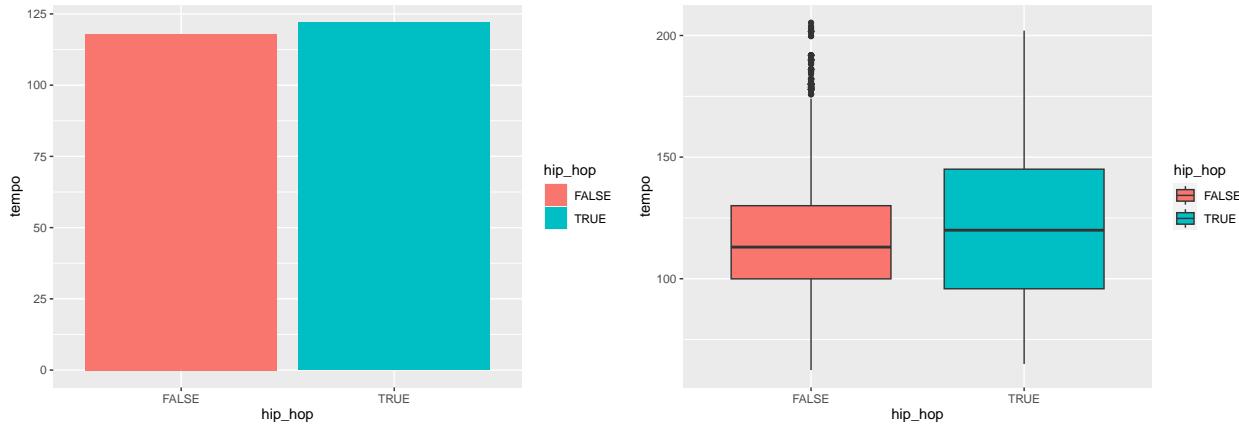
#### Descriptive statistics by group

group: FALSE

```
vars   n mean   sd median trimmed  mad  min max range skew kurtosis se
X1    1 4736 0.51 0.23   0.53    0.51 0.26 0.03 0.97  0.93    0   -0.79  0
```

group: TRUE

```
vars   n mean   sd median trimmed  mad  min max range skew kurtosis se
X1    1 4099 0.5  0.21   0.47    0.5 0.22 0.04 0.96  0.92  0.12   -0.72  0
[1] "tempo and album_type"
```



#### Descriptive statistics by group

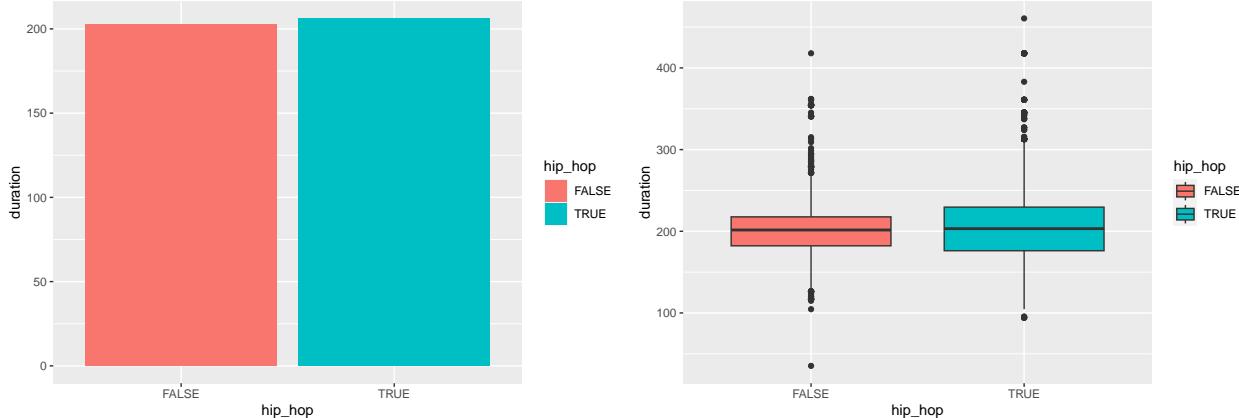
group: FALSE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew
X1	1	4736	117.93	25.19	113.01	115.26	22.13	62.45	205.27	142.83	0.89
	kurtosis										
X1		0.55	0.37								

group: TRUE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis
X1	1	4099	121.93	30.8	119.96	120.2	37.12	64.93	202.01	137.07	0.39	-0.97
	se											
X1		0.48										

[1] "duration and album\_type"



#### Descriptive statistics by group

group: FALSE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew
X1	1	4736	202.59	29.94	201.57	201.39	27.11	35.24	417.92	382.68	0.9
	kurtosis										
X1		4.37	0.44								

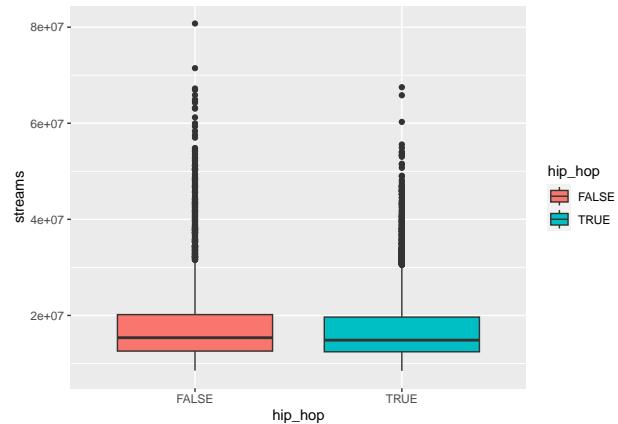
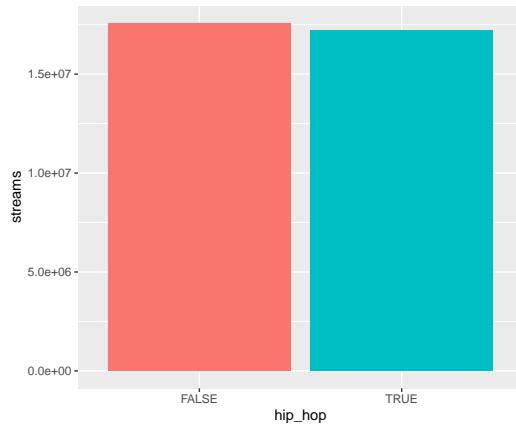
group: TRUE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew
X1	1	4099	206.21	46.77	203.2	202.98	39.51	94.25	460.57	366.33	1.04

```

kurtosis      se
X1      2.81 0.73
[1] "streams and album_type"

```



```

Descriptive statistics by group
group: FALSE

```

	vars	n	mean	sd	median	trimmed	mad	min	max
X1	1	4736	17558492	7465655	15364731	16268565	4880534	8509565	80764045
	range	skew	kurtosis	se					
X1	72254480	2.46	8.94	108483.1					

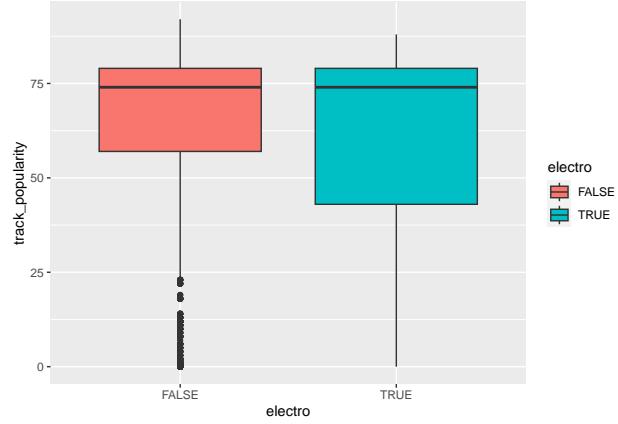
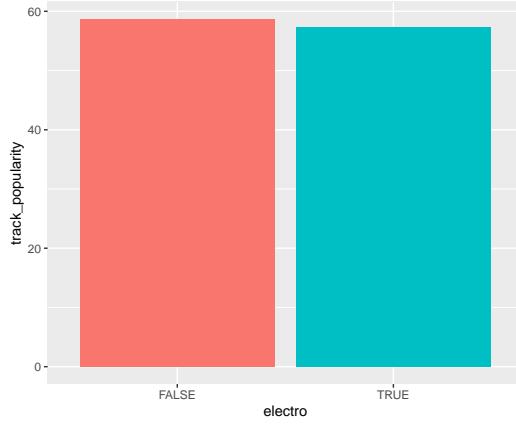
```

group: TRUE

```

	vars	n	mean	sd	median	trimmed	mad	min	max
X1	1	4099	17225911	7026541	14854453	15985430	4397667	8454914	67499798
	range	skew	kurtosis	se					
X1	59044884	1.98	5.22	109749.5					

```
[1] "track_popularity and album_type"
```



```

Descriptive statistics by group
group: FALSE

```

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	5511	58.66	31.46	74	62.52	11.86	0	92	92	-1.14	-0.46	0.42

```

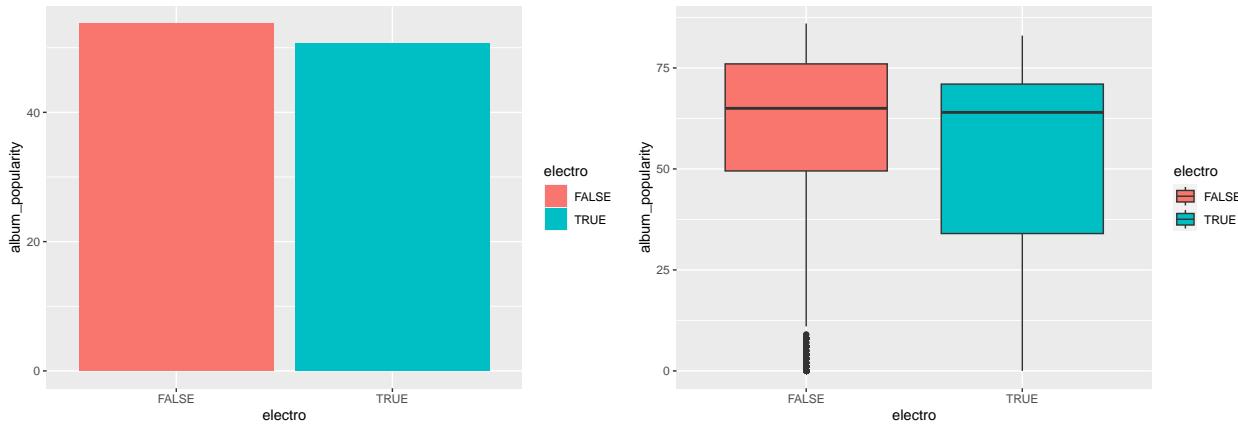
group: TRUE

```

```

vars      n  mean    sd median trimmed   mad min max range skew kurtosis    se
X1       1 3324 57.34 32.06      74   61.14 10.38     0  88    88 -1.07    -0.66 0.56
[1] "album_popularity and album_type"

```



Descriptive statistics by group  
group: FALSE

```

vars      n  mean    sd median trimmed   mad min max range skew kurtosis    se
X1       1 5511 53.75 30.34      65   56.64 17.79     0  86    86 -0.96    -0.67 0.41

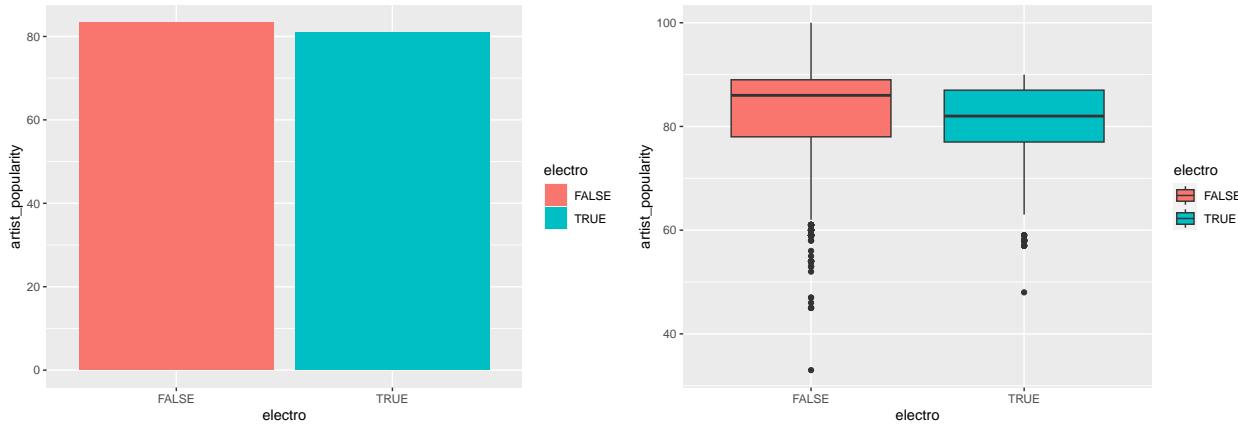
```

group: TRUE

```

vars      n  mean    sd median trimmed   mad min max range skew kurtosis    se
X1       1 3324 50.62 29.47      64   53.13 14.83     0  83    83 -0.93    -0.79 0.51
[1] "artist_popularity and album_type"

```



Descriptive statistics by group  
group: FALSE

```

vars      n  mean    sd median trimmed   mad min max range skew kurtosis    se
X1       1 5511 83.29 9.42      86   83.97 7.41    33 100    67 -0.74     0.43 0.13

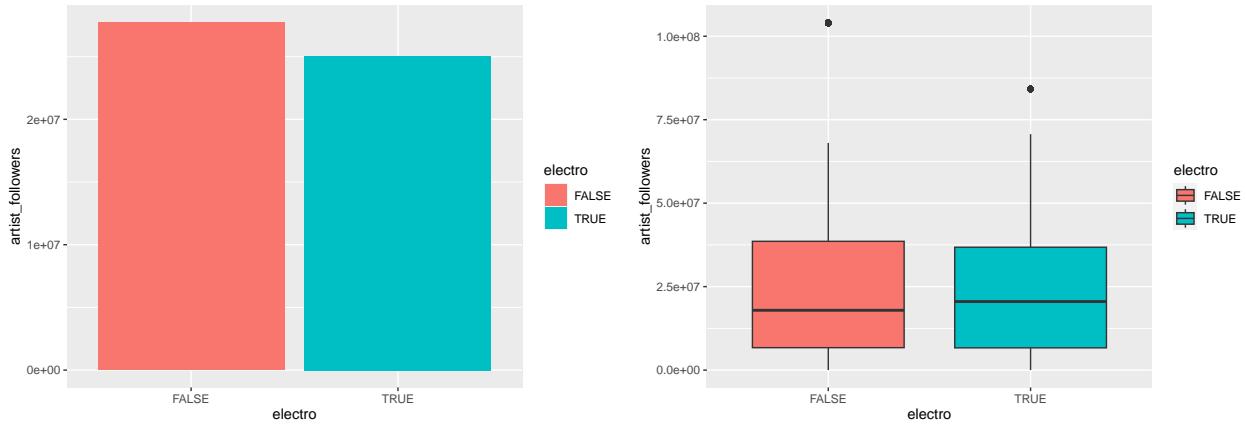
```

group: TRUE

```

vars      n  mean    sd median trimmed   mad min max range skew kurtosis    se
X1       1 3324 81.01 6.63      82   81.79 7.41    48  90    42 -0.96     0.82 0.11
[1] "artist_followers and album_type"

```



Descriptive statistics by group

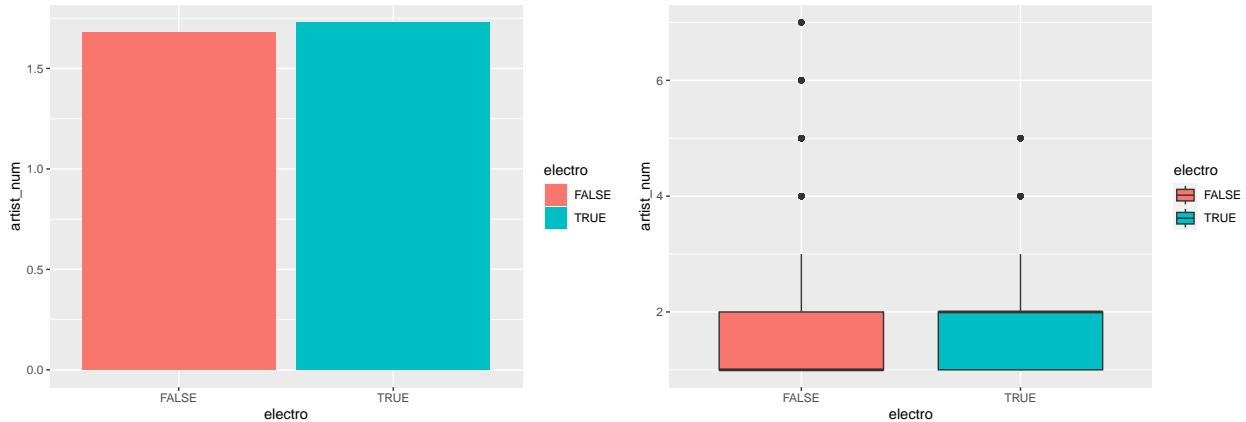
group: FALSE

	vars	n	mean	sd	median	trimmed	mad	min	max
X1	1	5511	27711438	26561173	17914328	24038001	23687121	3805	104059839
			range	skew	kurtosis	se			
X1		104056034	1.15	0.82	357793.2				

group: TRUE

	vars	n	mean	sd	median	trimmed	mad	min	max
X1	1	3324	25047334	23601524	20531406	21227083	20718952	14787	84227300
			range	skew	kurtosis	se			
X1		84212513	1.28	0.81	409363.9				

[1] "artist\_num and album\_type"



Descriptive statistics by group

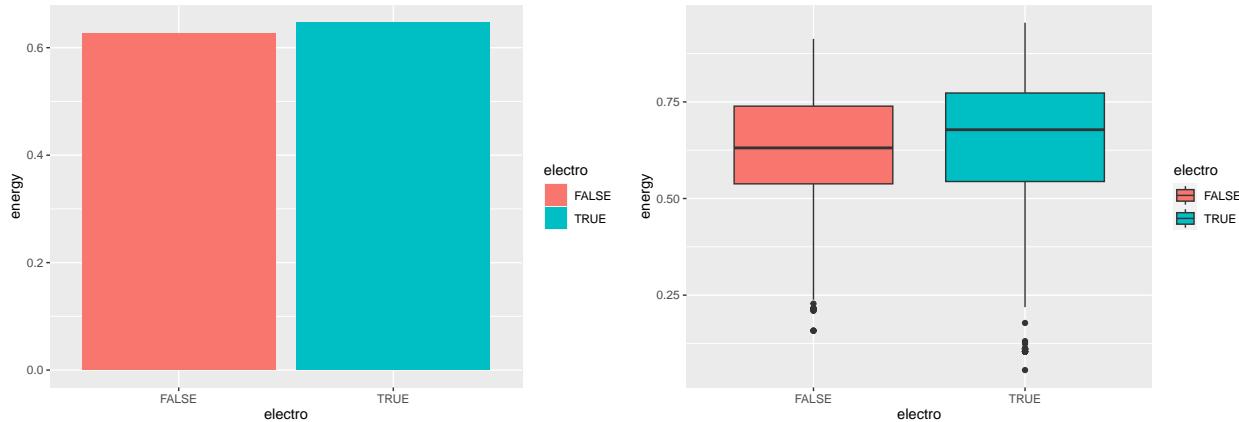
group: FALSE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	5511	1.68	0.95	1	1.49	0	1	7	6	2.09	5.88	0.01

group: TRUE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	3324	1.73	0.82	2	1.6	1.48	1	5	4	1.19	1.42	0.01

[1] "energy and album\_type"



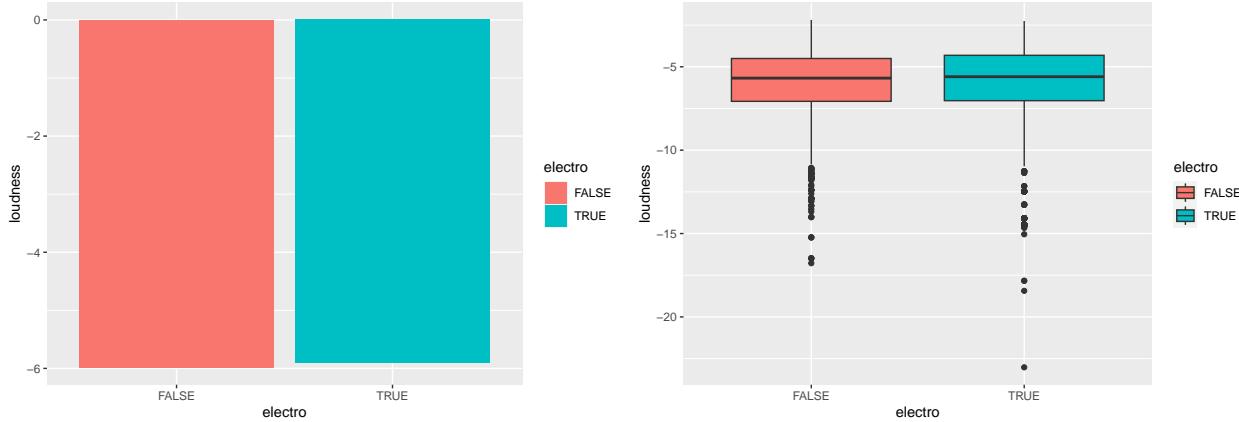
#### Descriptive statistics by group

group: FALSE

```
vars   n  mean   sd median trimmed  mad  min  max range skew kurtosis se
X1    1 5511 0.63 0.14    0.63    0.63 0.15 0.16 0.91 0.76 -0.35   -0.34  0
```

group: TRUE

```
vars   n  mean   sd median trimmed  mad  min  max range skew kurtosis se
X1    1 3324 0.65 0.16    0.68    0.66 0.17 0.06 0.96 0.9 -0.74   0.29  0
[1] "loudness and album_type"
```



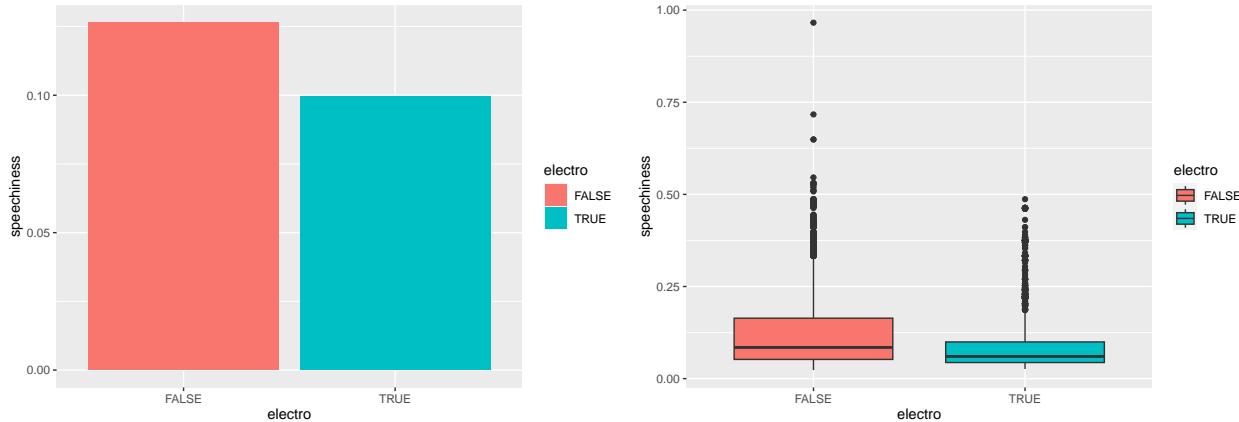
#### Descriptive statistics by group

group: FALSE

```
vars   n  mean   sd median trimmed  mad  min  max range skew kurtosis se
X1    1 5511 -5.98 2.01   -5.68   -5.83 1.88 -16.78 -2.19 14.59 -0.85   1.12
      se
X1  0.03
```

group: TRUE

```
vars   n  mean   sd median trimmed  mad  min  max range skew kurtosis se
X1    1 3324 -5.91 2.34   -5.6    -5.62 1.98 -23.02 -2.25 20.77 -1.58   3.93
      se
X1  0.04
[1] "speechiness and album_type"
```



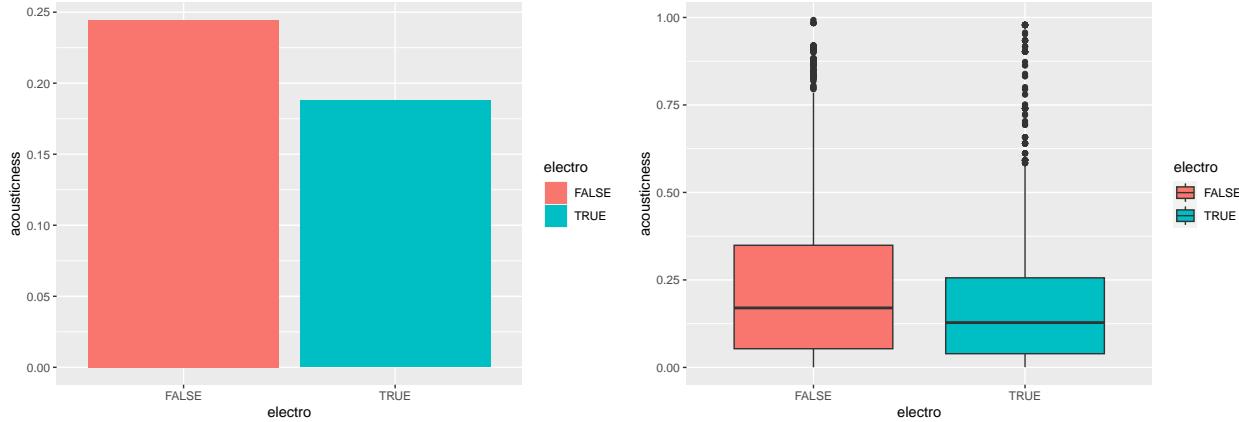
#### Descriptive statistics by group

group: FALSE

```
vars   n mean   sd median trimmed mad min max range skew kurtosis se
X1     1 5511 0.13 0.1    0.08    0.11 0.06 0.02 0.97 0.94 1.57    2.38 0
```

group: TRUE

```
vars   n mean   sd median trimmed mad min max range skew kurtosis se
X1     1 3324 0.1 0.09  0.06    0.08 0.03 0.03 0.49 0.46 2.04    3.5 0
[1] "acousticness and album_type"
```



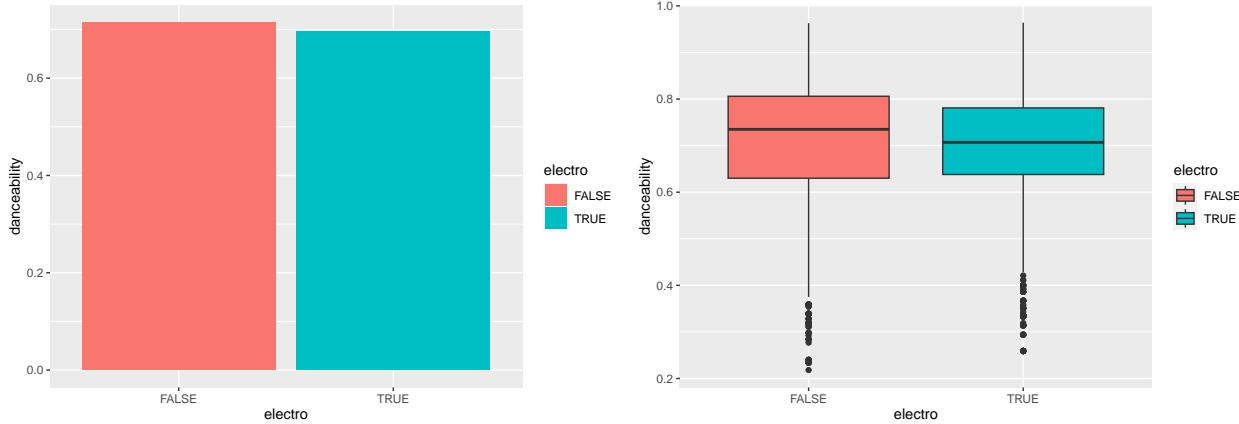
#### Descriptive statistics by group

group: FALSE

```
vars   n mean   sd median trimmed mad min max range skew kurtosis se
X1     1 5511 0.24 0.24  0.17    0.21 0.2   0 0.99 0.99 1.09    0.15 0
```

group: TRUE

```
vars   n mean   sd median trimmed mad min max range skew kurtosis se
X1     1 3324 0.19 0.2   0.13    0.15 0.14  0 0.98 0.98 1.73    3.13 0
[1] "danceability and album_type"
```



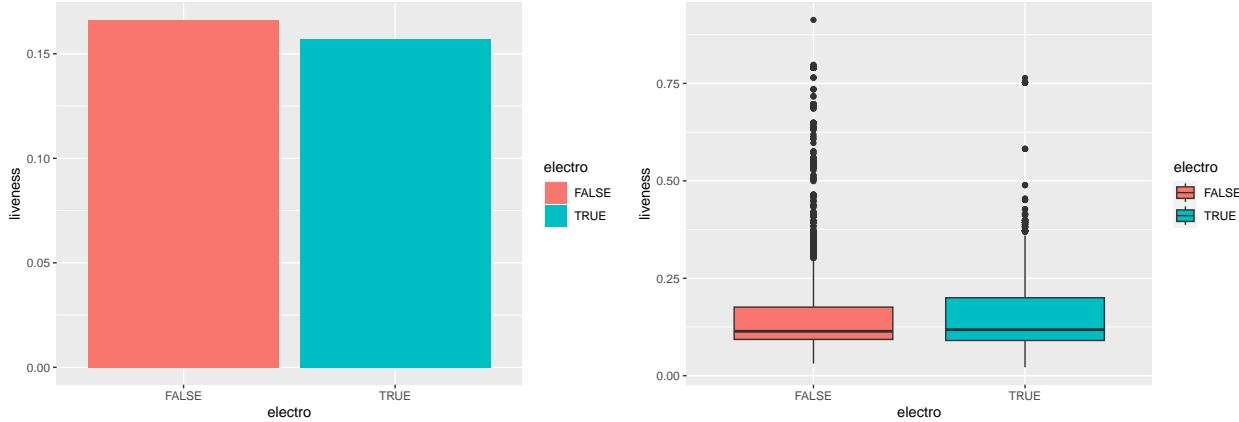
#### Descriptive statistics by group

group: FALSE

```
vars   n  mean   sd median trimmed  mad  min  max range skew kurtosis se
X1    1 5511  0.71  0.13    0.74    0.72  0.12  0.22  0.96  0.74 -0.67    0.24  0
```

group: TRUE

```
vars   n  mean   sd median trimmed  mad  min  max range skew kurtosis se
X1    1 3324  0.7  0.13    0.71    0.71  0.11  0.26  0.96  0.7 -0.84    1.05  0
[1] "liveness and album_type"
```



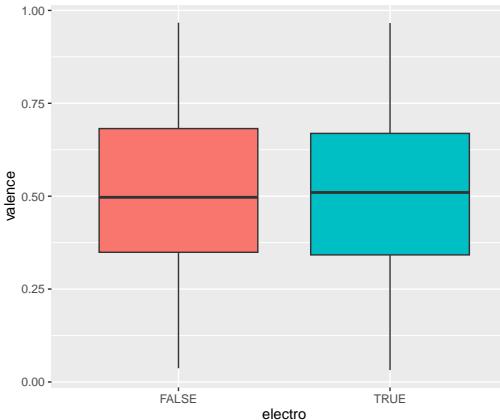
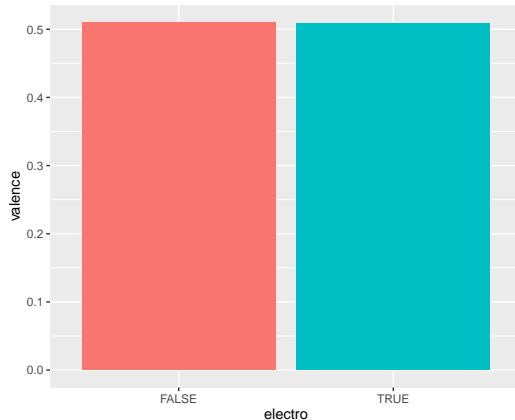
#### Descriptive statistics by group

group: FALSE

```
vars   n  mean   sd median trimmed  mad  min  max range skew kurtosis se
X1    1 5511  0.17  0.13    0.11    0.14  0.04  0.03  0.91  0.88 2.46    6.8  0
```

group: TRUE

```
vars   n  mean   sd median trimmed  mad  min  max range skew kurtosis se
X1    1 3324  0.16  0.1    0.12    0.14  0.05  0.02  0.76  0.74 1.74    4.34  0
[1] "valence and album_type"
```



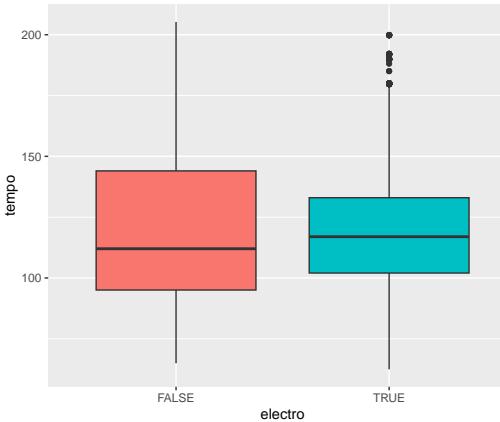
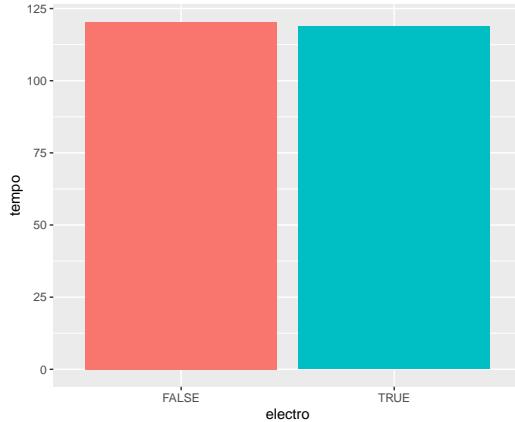
#### Descriptive statistics by group

group: FALSE

```
vars   n  mean   sd median trimmed  mad  min  max range skew kurtosis se
X1    1 5511 0.51 0.22     0.5    0.51 0.24 0.04 0.97 0.93 0.05    -0.8  0
```

group: TRUE

```
vars   n  mean   sd median trimmed  mad  min  max range skew kurtosis se
X1    1 3324 0.51 0.22     0.51    0.51 0.24 0.03 0.97 0.93 0.05    -0.67 0
[1] "tempo and album_type"
```



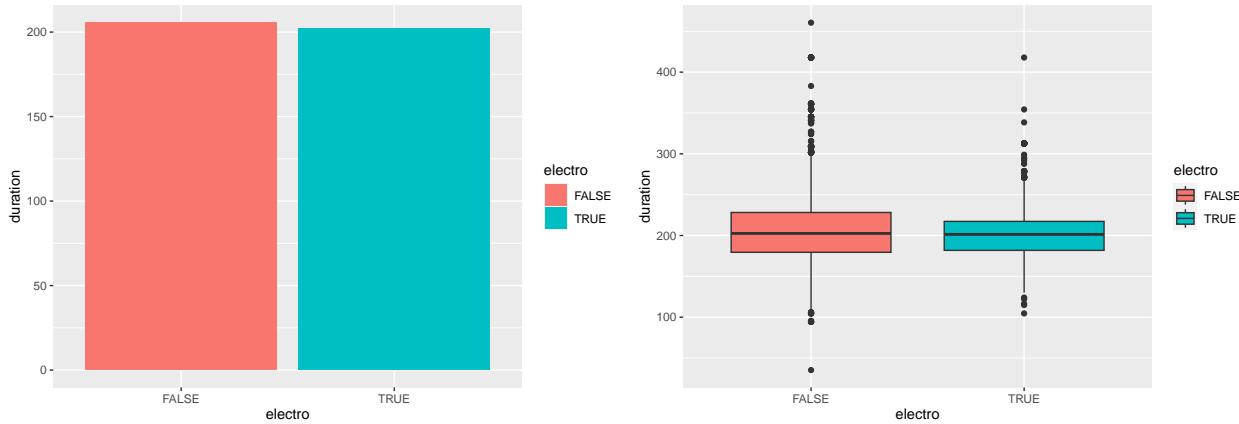
#### Descriptive statistics by group

group: FALSE

```
vars   n  mean   sd median trimmed  mad  min  max range skew
X1    1 5511 120.37 30.88 112.02 118.32 31.18 64.93 205.27 140.34 0.51
      kurtosis   se
X1    -0.87 0.42
```

group: TRUE

```
vars   n  mean   sd median trimmed  mad  min  max range skew kurtosis se
X1    1 3324 118.81 22.4 116.97 116.72 22.16 62.45 199.86 137.42 0.96    1.27
      se
X1  0.39
[1] "duration and album_type"
```



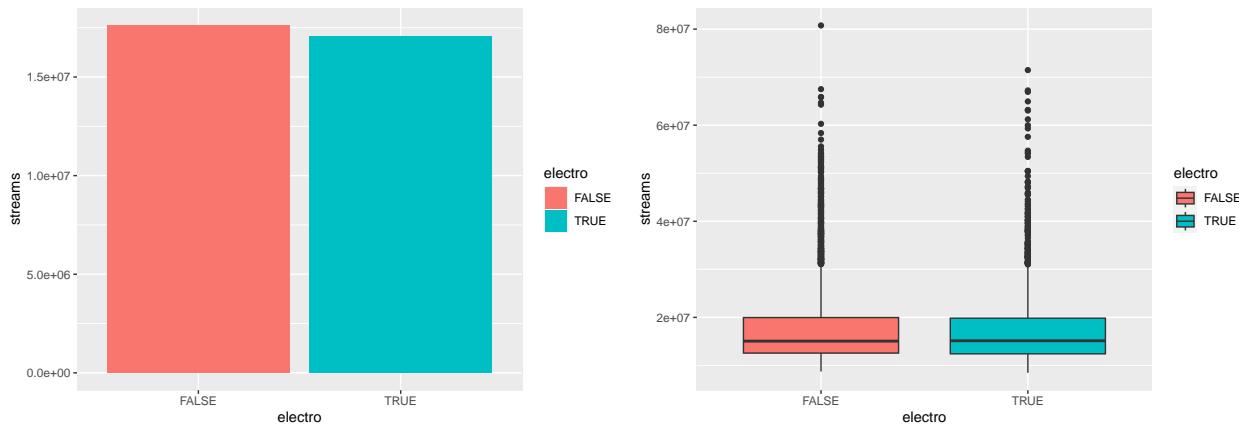
#### Descriptive statistics by group

group: FALSE

```
vars   n   mean    sd median trimmed   mad   min   max range skew
X1     1 5511 205.57 43.49 202.55 202.98 35.48 35.24 460.57 425.33 1.06
      kurtosis   se
X1     3.55 0.59
```

group: TRUE

```
vars   n   mean    sd median trimmed   mad   min   max range skew
X1     1 3324 202.11 28.97 201.39 200.3 26.84 104.59 417.92 313.33 0.93
      kurtosis   se
X1     2.86 0.5
[1] "streams and album_type"
```



#### Descriptive statistics by group

group: FALSE

```
vars   n   mean    sd median trimmed   mad   min   max range skew
X1     1 5511 17614595 7557955 15054287 16247699 4552577 8739078 80764045
      kurtosis   se
X1 72024967 2.17      6.38 101809.7
```

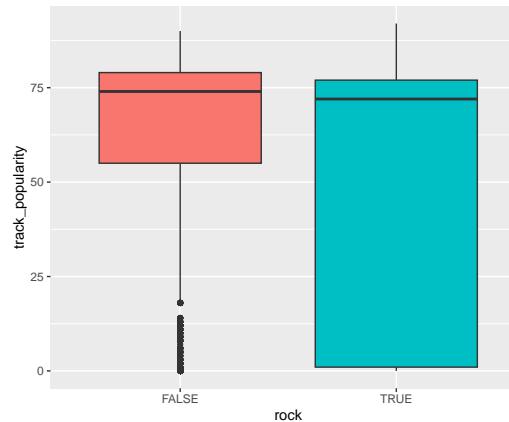
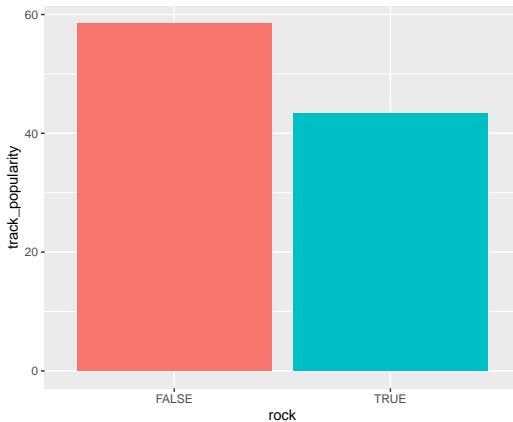
group: TRUE

```
vars   n   mean    sd median trimmed   mad   min   max range skew
X1     1 3324 17055354 6742908 15129771 15987465 4761766 8454914 71467874
```

```

range skew kurtosis      se
X1 63012960 2.44      9.95 116954.4
[1] "track_popularity and album_type"

```



Descriptive statistics by group  
group: FALSE

```

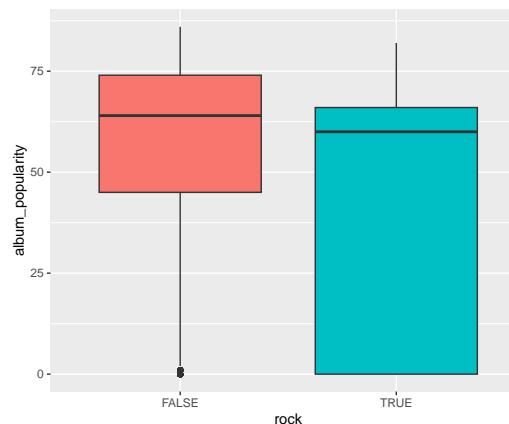
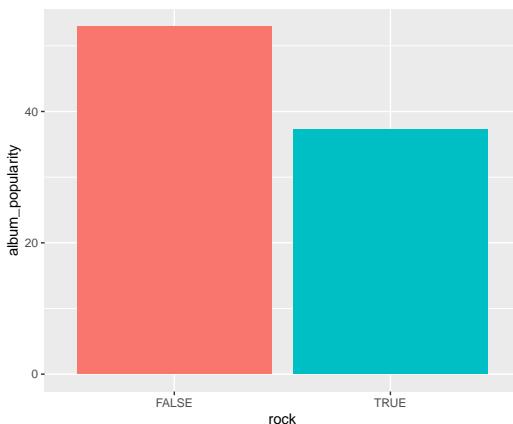
vars   n  mean    sd median trimmed   mad min max range skew kurtosis   se
X1     1 8646 58.49 31.49      74    62.4 10.38    0  90    90 -90 -1.14    -0.47 0.34
-----
```

group: TRUE

```

vars   n  mean    sd median trimmed   mad min max range skew kurtosis   se
X1     1 189 43.28 37.13      72    43.72 14.83    0  92    92 -92 -0.23    -1.89 2.7
[1] "album_popularity and album_type"

```



Descriptive statistics by group  
group: FALSE

```

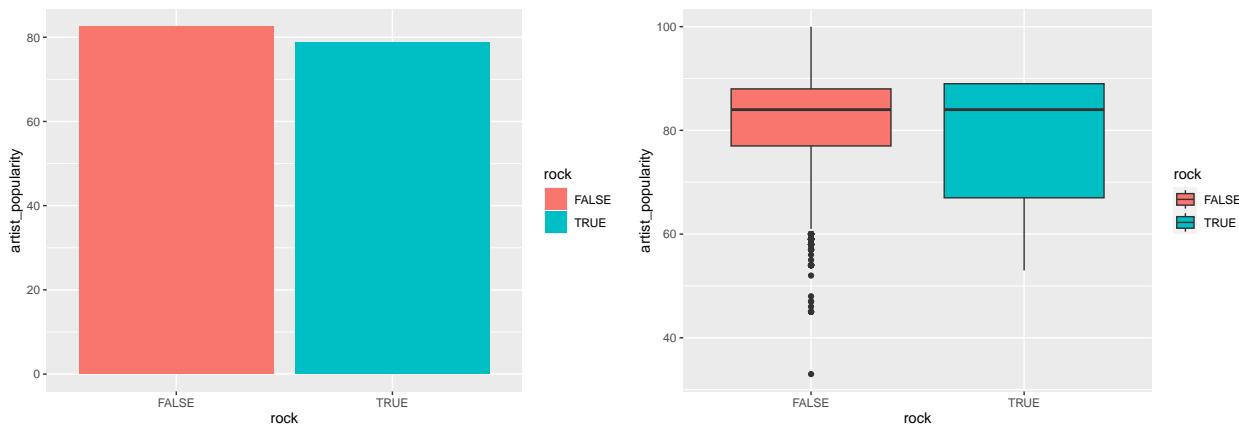
vars   n  mean    sd median trimmed   mad min max range skew kurtosis   se
X1     1 8646 52.9 29.91      64    55.66 16.31    0  86    86 -86 -0.96    -0.67 0.32
-----
```

group: TRUE

```

vars   n  mean    sd median trimmed   mad min max range skew kurtosis   se
X1     1 189 37.22 32.72      60    37.03 23.72    0  82    82 -82 -0.19    -1.86 2.38
[1] "artist_popularity and album_type"

```



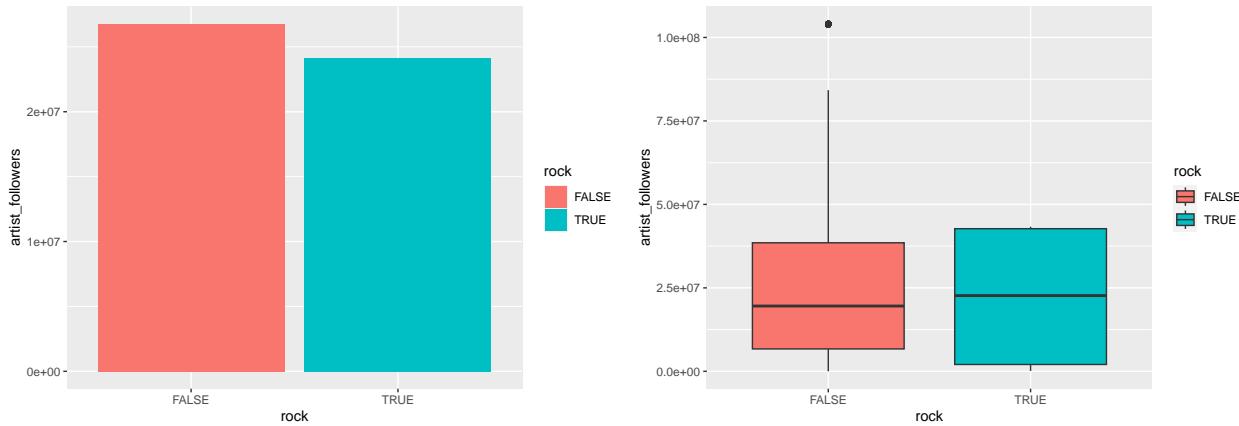
#### Descriptive statistics by group

group: FALSE

```
vars   n  mean    sd median trimmed  mad min max range skew kurtosis   se
X1     1 8646 82.51 8.47      84   83.04 7.41   33 100     67 -0.65      0.64 0.09
```

group: TRUE

```
vars   n  mean    sd median trimmed  mad min max range skew kurtosis   se
X1     1 189 78.79 11.06      84   80.04 7.41   53  89     36 -0.7      -0.99 0.8
[1] "artist_followers and album_type"
```



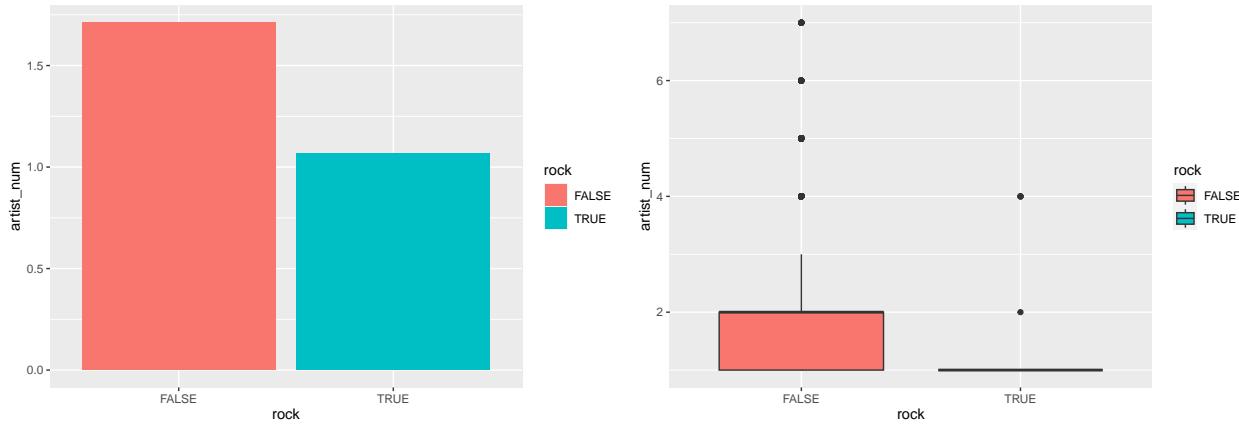
#### Descriptive statistics by group

group: FALSE

```
vars   n  mean    sd median trimmed  mad min max range skew kurtosis   se
X1     1 8646 26765453 25638206 19562506 22964183 22058882 3805 104059839
          range skew kurtosis   se
X1 104056034 1.22      0.88 275727.5
```

group: TRUE

```
vars   n  mean    sd median trimmed  mad min max range skew kurtosis   se
X1     1 189 24132103 19188591 22688104 24682236 29704674 118316 43313246
          range skew kurtosis   se
X1 43194930 -0.12      -1.88 1395765
[1] "artist_num and album_type"
```



#### Descriptive statistics by group

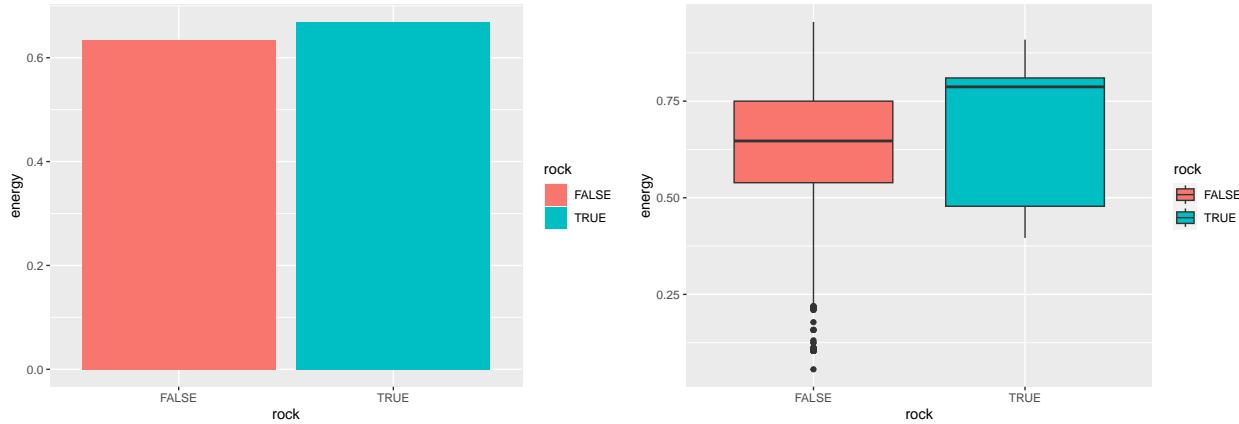
group: FALSE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	8646	1.71	0.91	2	1.55	1.48	1	7	6	1.82	4.76	0.01

group: TRUE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	189	1.07	0.44	1	1	0	1	4	3	6.38	39.47	0.03

[1] "energy and album\_type"



#### Descriptive statistics by group

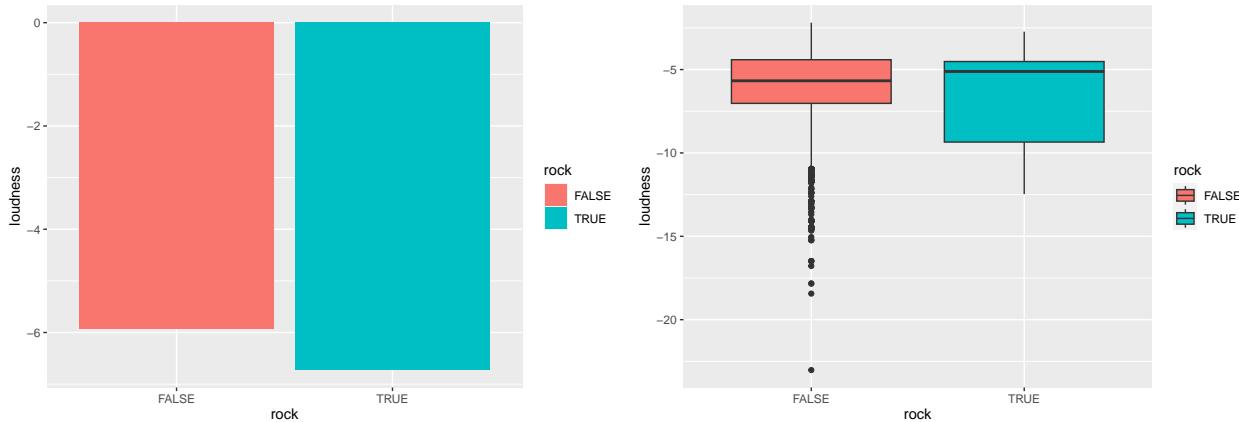
group: FALSE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	8646	0.63	0.15	0.65	0.64	0.16	0.06	0.96	0.9	-0.52	-0.03	0

group: TRUE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	189	0.67	0.17	0.79	0.67	0.17	0.4	0.91	0.51	-0.25	-1.45	0.01

[1] "loudness and album\_type"



#### Descriptive statistics by group

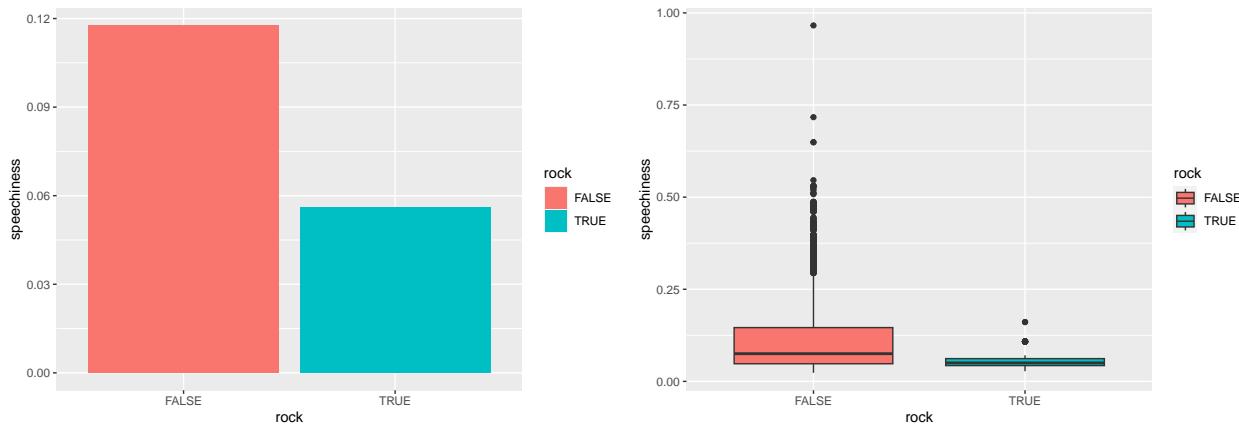
group: FALSE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis
X1	1	8646	-5.94	2.11	-5.67	-5.74	1.9	-23.02	-2.19	20.84	-1.22	2.88
	se											
X1	0.02											

group: TRUE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis
X1	1	189	-6.73	3.02	-5.12	-6.52	2.78	-12.47	-2.73	9.74	-0.56	-0.98
	se											
X1	0.22											

[1] "speechiness and album\_type"



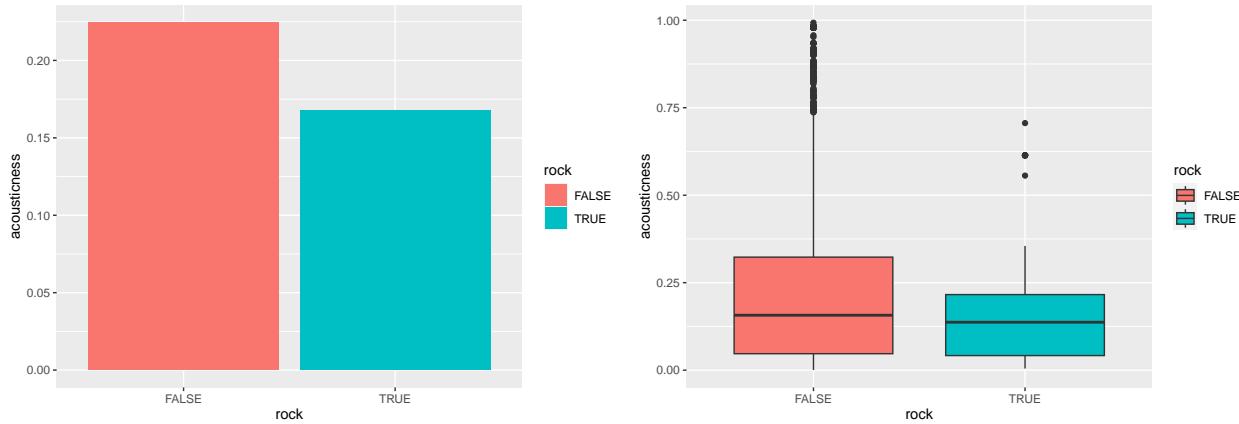
#### Descriptive statistics by group

group: FALSE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	8646	0.12	0.1	0.08	0.1	0.05	0.02	0.97	0.94	1.69	2.58	0
	se												

group: TRUE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	189	0.06	0.03	0.05	0.05	0.02	0.03	0.16	0.13	1.6	2.6	0
	se												



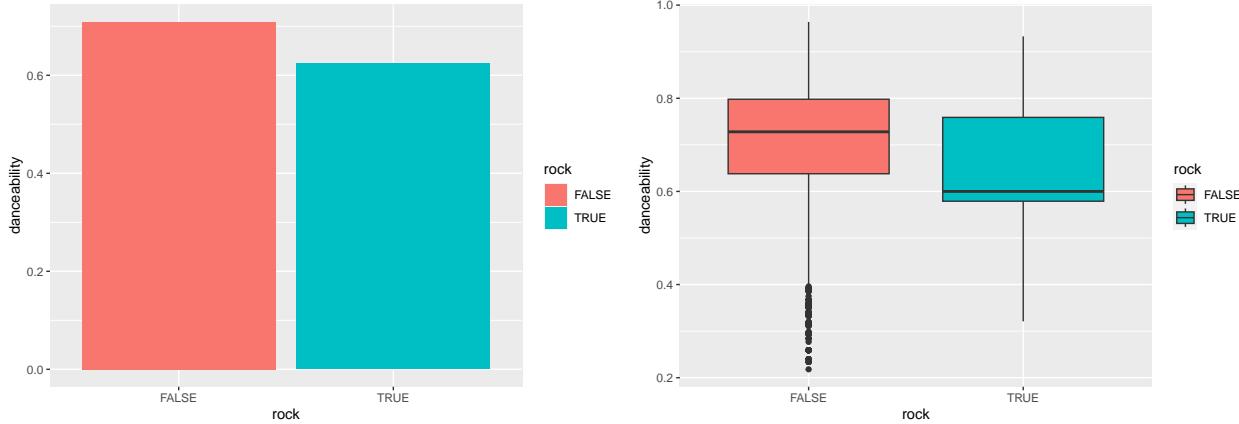
#### Descriptive statistics by group

group: FALSE

```
vars   n mean   sd median trimmed mad min  max range skew kurtosis se
X1     1 8646 0.22 0.23    0.16    0.19 0.18    0 0.99 0.99 1.29      0.89 0
```

group: TRUE

```
vars   n mean   sd median trimmed mad min  max range skew kurtosis se
X1     1 189 0.17 0.17    0.14    0.14 0.14    0 0.71 0.7 1.38      1.54 0.01
[1] "danceability and album_type"
```



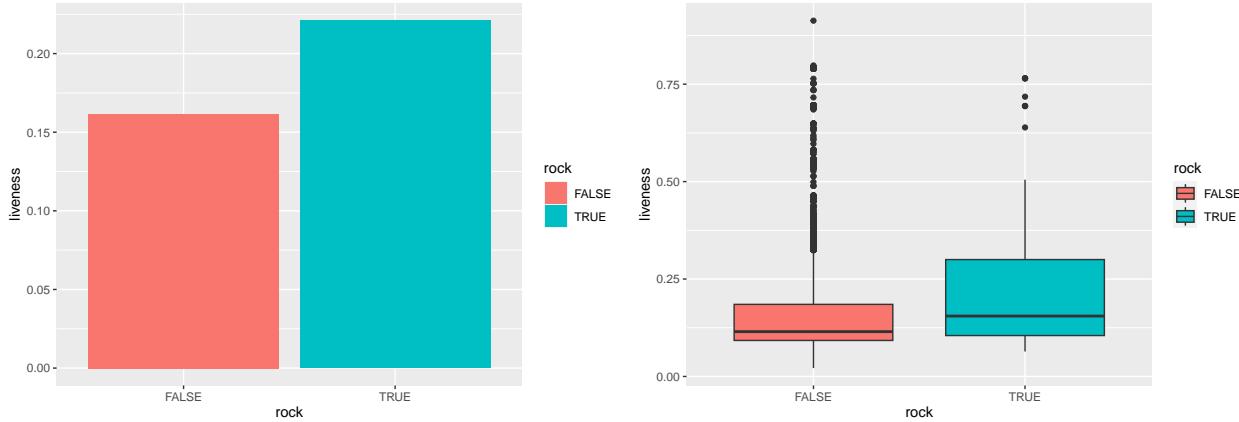
#### Descriptive statistics by group

group: FALSE

```
vars   n mean   sd median trimmed mad min  max range skew kurtosis se
X1     1 8646 0.71 0.13    0.73    0.72 0.12 0.22 0.96 0.75 -0.73      0.59 0
```

group: TRUE

```
vars   n mean   sd median trimmed mad min  max range skew kurtosis se
X1     1 189 0.62 0.14    0.6     0.63 0.2 0.32 0.93 0.61 -0.31    -0.79 0.01
[1] "liveness and album_type"
```



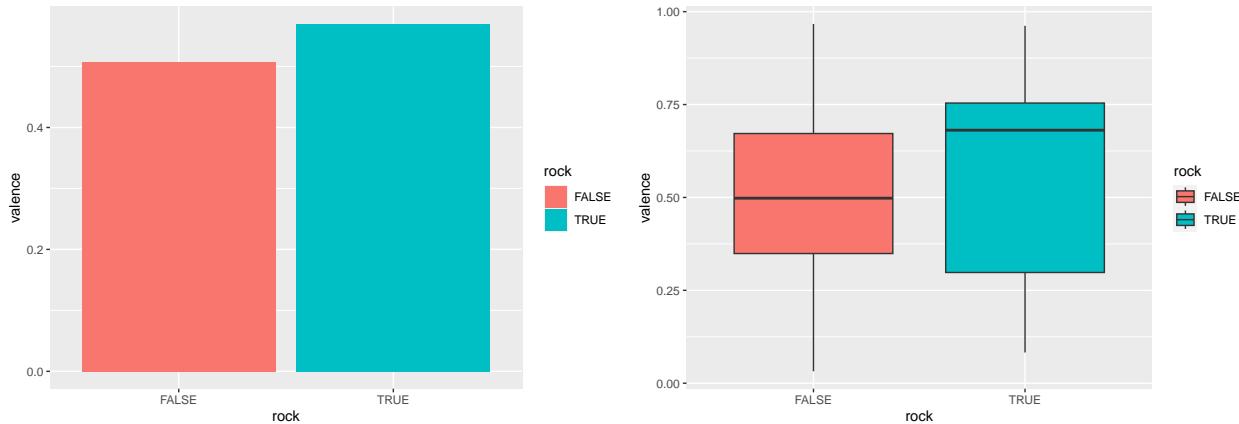
#### Descriptive statistics by group

group: FALSE

```
vars   n mean   sd median trimmed   mad   min   max range skew kurtosis se
X1     1 8646 0.16 0.12    0.12    0.14  0.05  0.02  0.91  0.89  2.4    7.23  0
```

group: TRUE

```
vars   n mean   sd median trimmed   mad   min   max range skew kurtosis se
X1     1 189 0.22 0.17    0.16    0.19  0.12  0.06  0.76  0.7  1.53    1.74  0.01
[1] "valence and album_type"
```



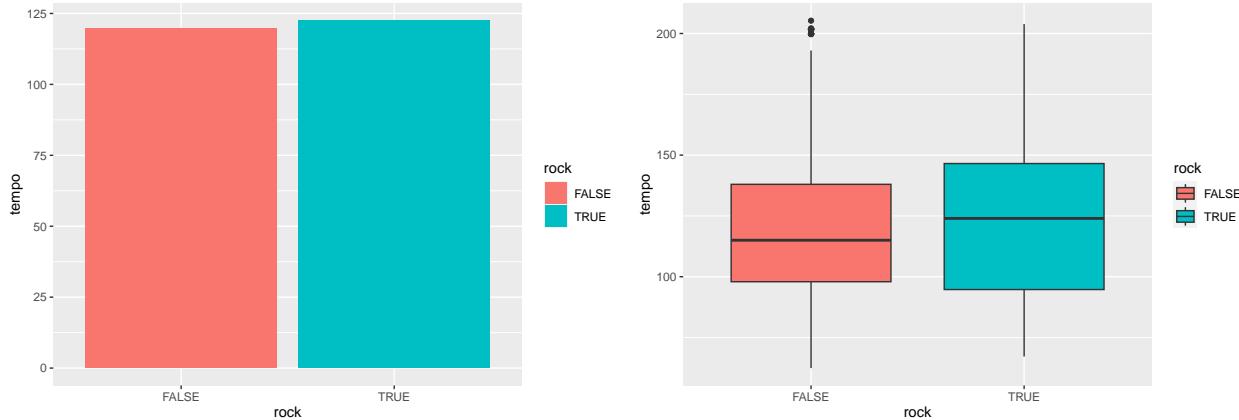
#### Descriptive statistics by group

group: FALSE

```
vars   n mean   sd median trimmed   mad   min   max range skew kurtosis se
X1     1 8646 0.51 0.22    0.5     0.51  0.23  0.03  0.97  0.93  0.05   -0.73  0
```

group: TRUE

```
vars   n mean   sd median trimmed   mad   min   max range skew kurtosis se
X1     1 189 0.57 0.27    0.68    0.57  0.39  0.08  0.96  0.88 -0.13   -1.51  0.02
[1] "tempo and album_type"
```



#### Descriptive statistics by group

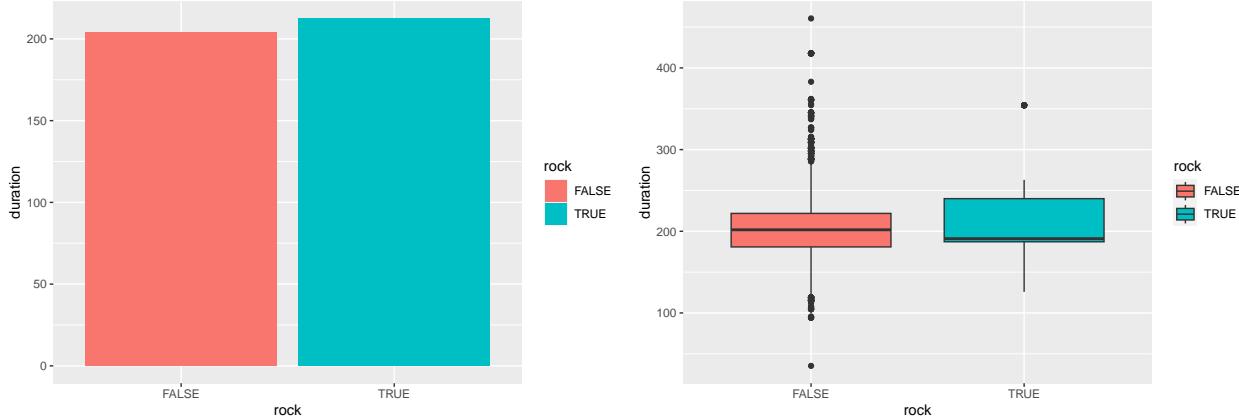
group: FALSE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew
X1	1	8646	119.73	27.81	115	117.31	28.26	62.45	205.27	142.83	0.65
	kurtosis										
X1		-0.34	0.3								

group: TRUE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis
X1	1	189	122.46	35.6	123.98	122.09	43.36	67.2	203.86	136.67	0.18	-1.07
	se											
X1		2.59										

[1] "duration and album\_type"



#### Descriptive statistics by group

group: FALSE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew
X1	1	8646	204.09	38.22	201.82	201.99	30.47	35.24	460.57	425.33	1.1
	kurtosis										
X1		4.36	0.41								

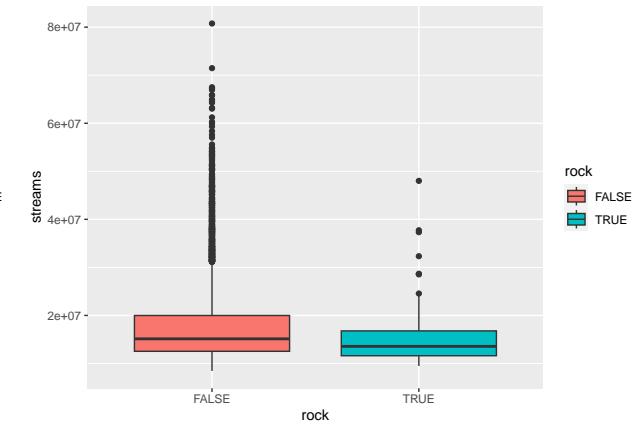
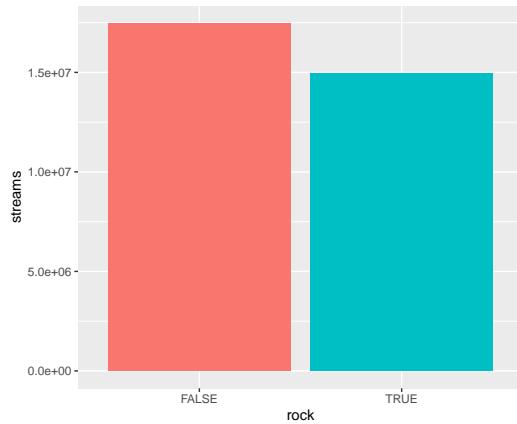
group: TRUE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew
X1	1	189	212.52	56.34	190.95	205.73	19.87	125.83	354.32	228.49	1.17

```

kurtosis se
X1      1.17 4.1
[1] "streams and album_type"

```



```

Descriptive statistics by group
group: FALSE

```

	vars	n	mean	sd	median	trimmed	mad	min	max
X1	1	8646	17457319	7297674	15126679	16186809	4665506	8454914	80764045
	range	skew	kurtosis	se					
X1	72309131	2.26	7.43	78483.23					

---

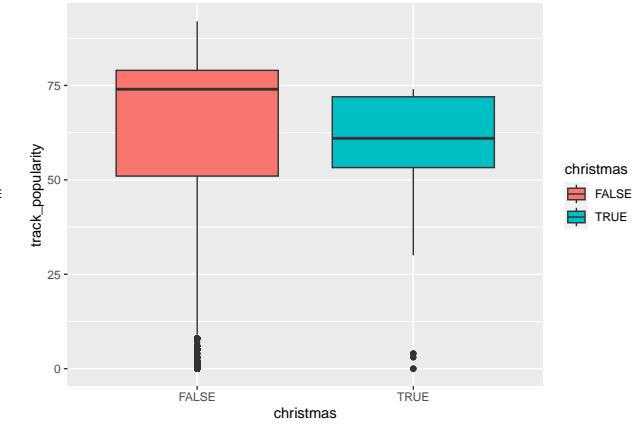
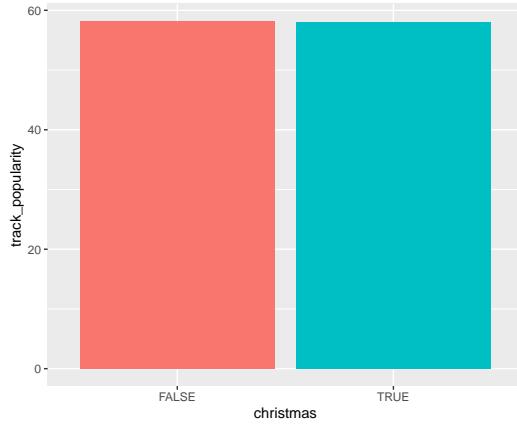
```

group: TRUE

```

	vars	n	mean	sd	median	trimmed	mad	min	max
X1	1	189	14973778	5126735	13563817	14140361	3188139	9487799	48011162
	range	skew	kurtosis	se					
X1	38523363	2.82	11.78	372915.1					

```
[1] "track_popularity and album_type"
```



```

Descriptive statistics by group
group: FALSE

```

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	8717	58.16	31.83	74	61.99	10.38	0	92	92	-1.11	-0.55	0.34

---

```

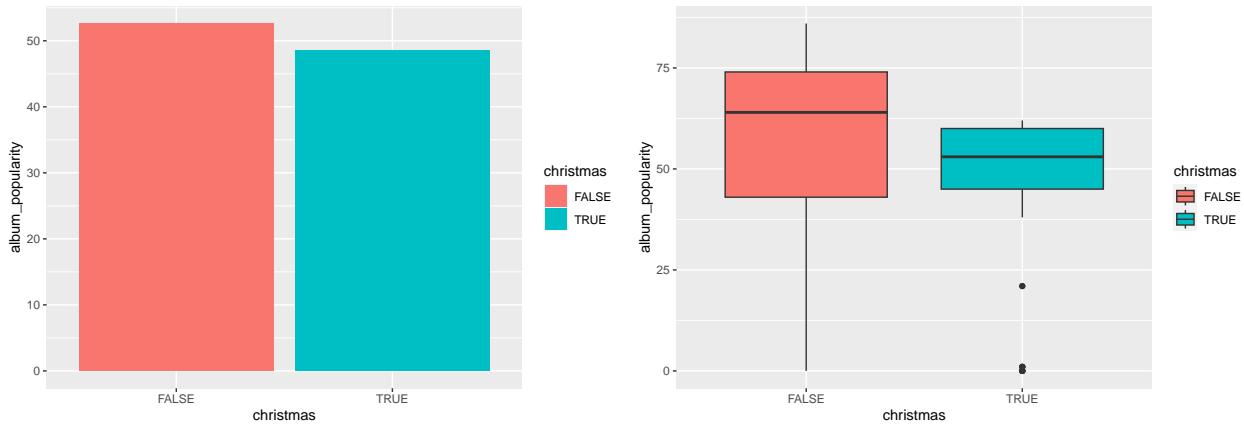
group: TRUE

```

```

vars   n  mean    sd median trimmed   mad min max range skew kurtosis    se
X1     1 118 58.07 19.26      61  62.35 14.83    0  74    74 -1.97      3.24 1.77
[1] "album_popularity and album_type"

```



Descriptive statistics by group  
group: FALSE

```

vars   n  mean    sd median trimmed   mad min max range skew kurtosis    se
X1     1 8717 52.62 30.19      64  55.31 17.79    0  86    86 -0.94      -0.73 0.32

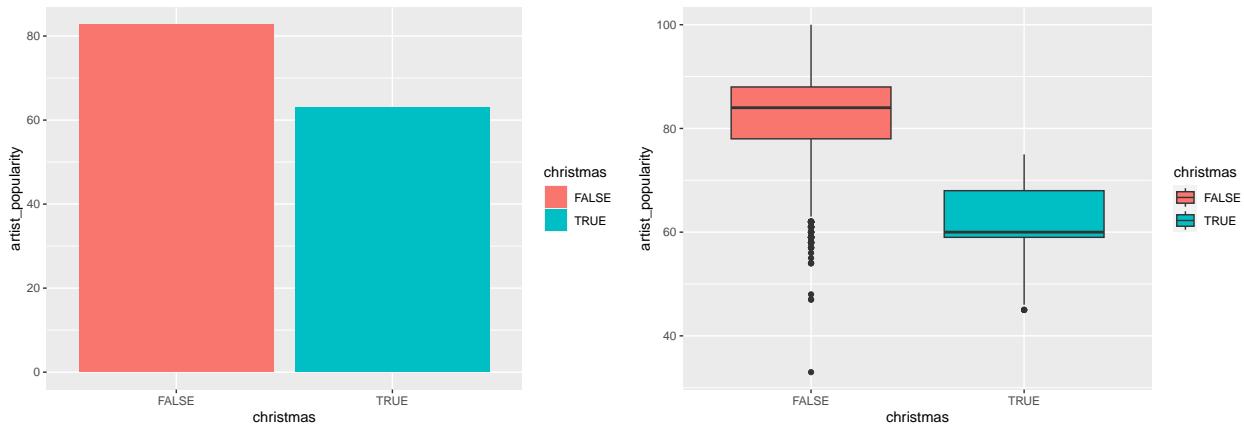
```

group: TRUE

```

vars   n  mean    sd median trimmed   mad min max range skew kurtosis    se
X1     1 118 48.59 16.92      53  52.36 10.38    0  62    62 -1.9       2.81 1.56
[1] "artist_popularity and album_type"

```



Descriptive statistics by group  
group: FALSE

```

vars   n  mean    sd median trimmed   mad min max range skew kurtosis    se
X1     1 8717 82.69 8.25      84  83.18 7.41   33 100    67 -0.58      0.42 0.09

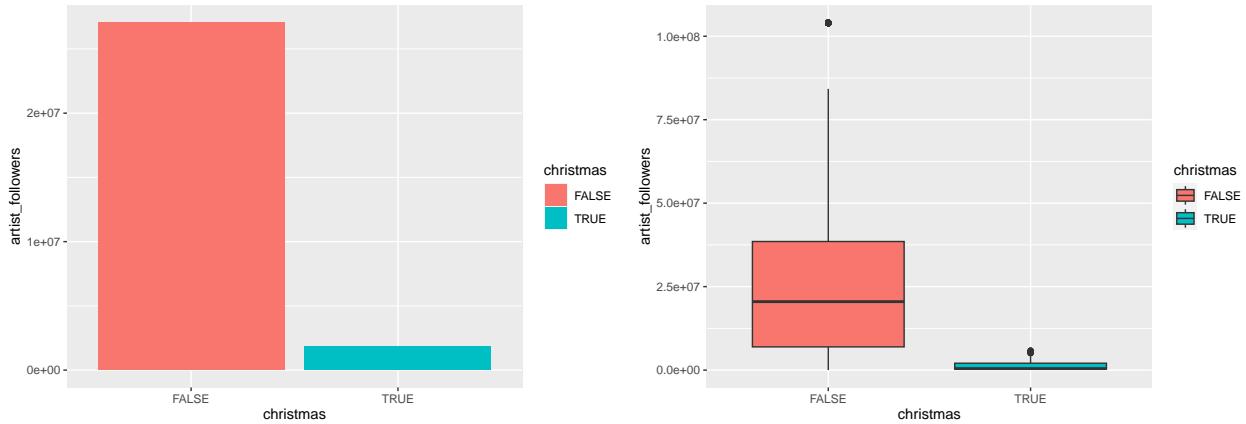
```

group: TRUE

```

vars   n  mean    sd median trimmed   mad min max range skew kurtosis    se
X1     1 118 63.02 8.06      60  63.28 10.38   45  75    30 -0.17      -0.6 0.74
[1] "artist_followers and album_type"

```



Descriptive statistics by group

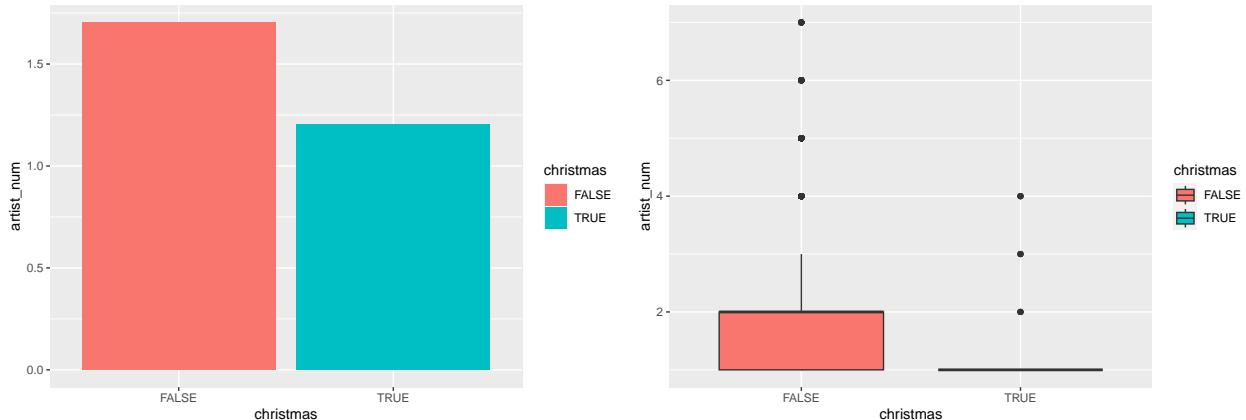
group: FALSE

	vars	n	mean	sd	median	trimmed	mad	min	max
X1	1	8717	27045637	25524745	20501433	23321793	23066865	3805	104059839
	range	skew	kurtosis	se					
X1	104056034	1.2	0.86	273387					

group: TRUE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew
X1	1	118	1849624	2109952	449009	1631466	630156.9	22644	5844413	5821769	0.89
	kurtosis	se									
X1	-0.87	194236.8									

[1] "artist\_num and album\_type"



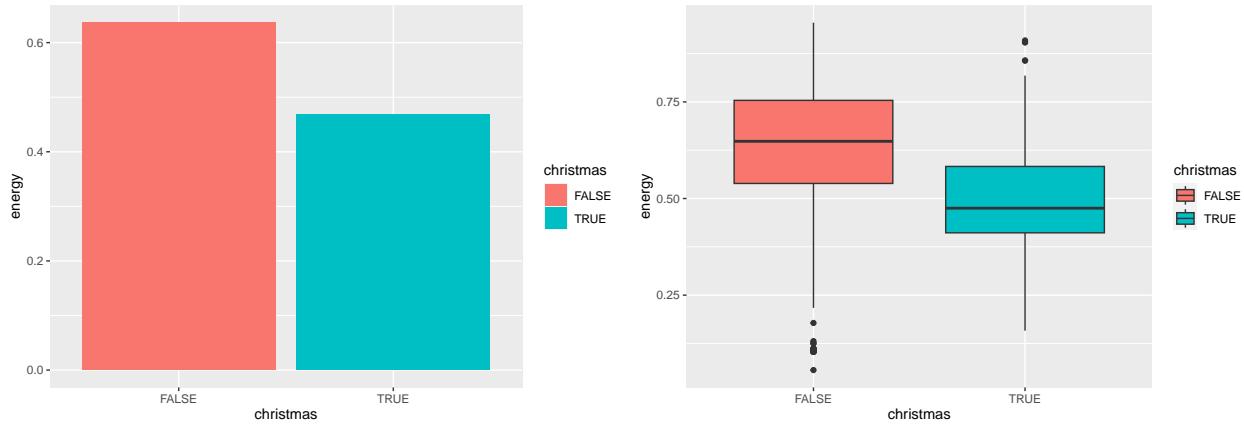
Descriptive statistics by group

group: FALSE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	kurtosis	se	
X1	1	8717	1.7	0.91	2	1.54	1.48	1	7	6	1.84	4.81	0.01
	range	skew	kurtosis	se									

group: TRUE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	118	1.2	0.66	1	1.01	0	1	4	3	3.28	9.79	0.06
	range	skew	kurtosis	se									



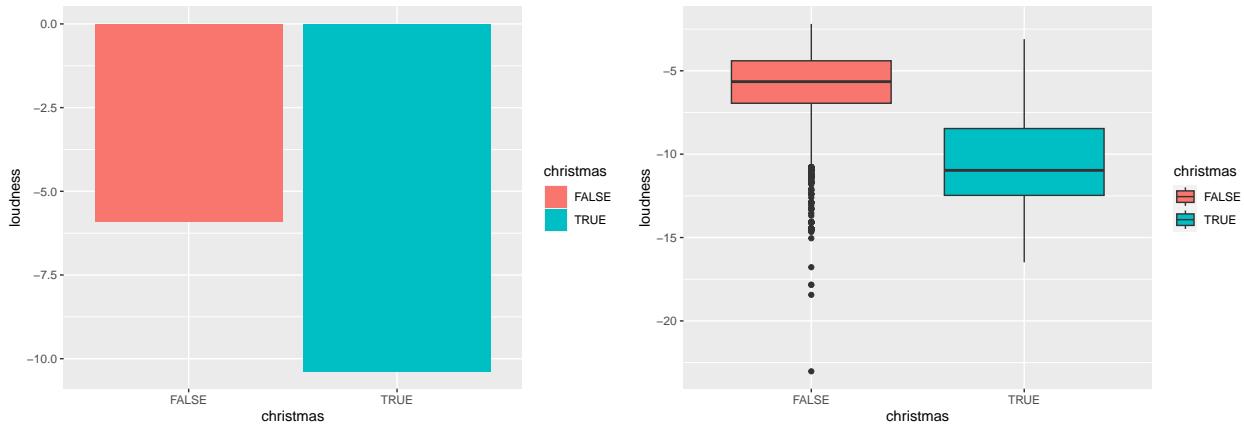
#### Descriptive statistics by group

group: FALSE

```
vars   n  mean   sd median trimmed  mad  min  max range skew kurtosis se
X1    1 8717 0.64 0.15    0.65    0.64 0.16 0.06 0.96  0.9 -0.5   -0.09  0
```

group: TRUE

```
vars   n  mean   sd median trimmed  mad  min  max range skew kurtosis se
X1    1 118 0.47 0.18    0.48    0.46 0.15 0.16 0.91  0.75 0.25   -0.21  0.02
[1] "loudness and album_type"
```



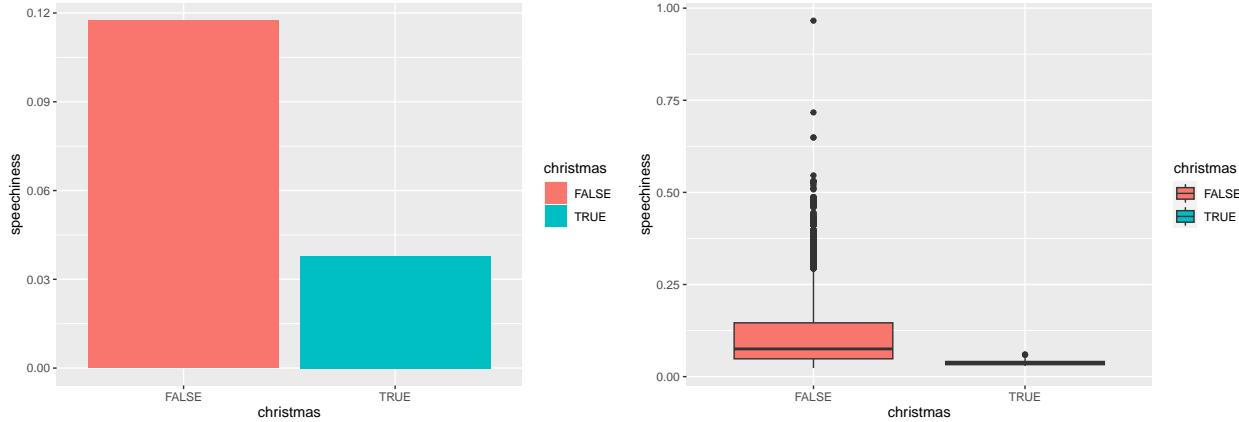
#### Descriptive statistics by group

group: FALSE

```
vars   n  mean   sd median trimmed  mad  min  max range skew kurtosis se
X1    1 8717 -5.89 2.07   -5.65   -5.71 1.89 -23.02 -2.19 20.84 -1.17    2.74
      se
X1  0.02
```

group: TRUE

```
vars   n  mean   sd median trimmed  mad  min  max range skew kurtosis se
X1    1 118 -10.38 2.65  -10.97  -10.33 3.29 -16.48 -3.1 13.38  0.03    0.13
      se
X1  0.24
[1] "speechiness and album_type"
```



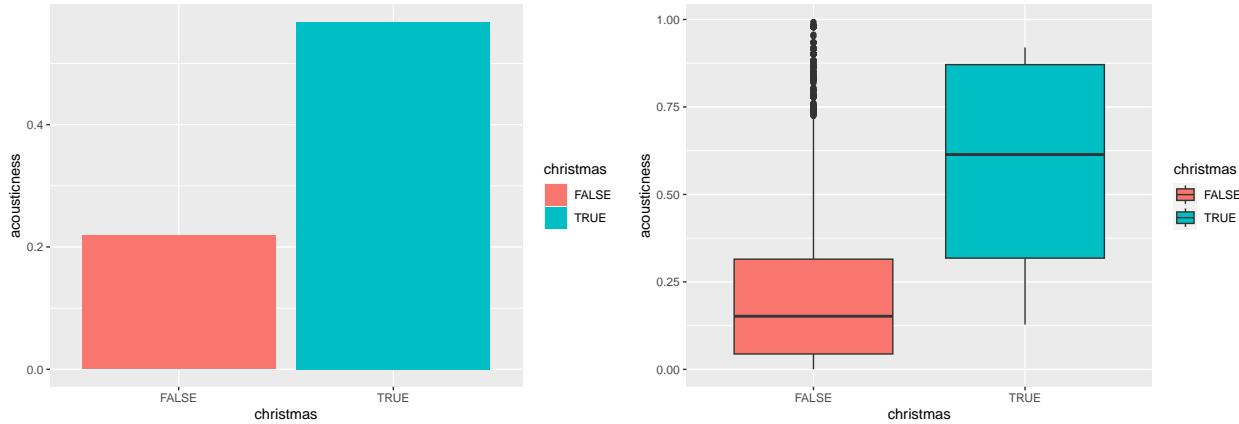
#### Descriptive statistics by group

group: FALSE

```
vars   n mean   sd median trimmed  mad min  max range skew kurtosis se
X1     1 8717 0.12 0.1    0.08      0.1 0.05 0.02 0.97 0.94  1.7    2.63  0
```

group: TRUE

```
vars   n mean   sd median trimmed  mad min  max range skew kurtosis se
X1     1 118 0.04 0.01    0.04      0.04 0.01 0.03 0.06 0.03 0.98    0.66  0
[1] "acousticness and album_type"
```



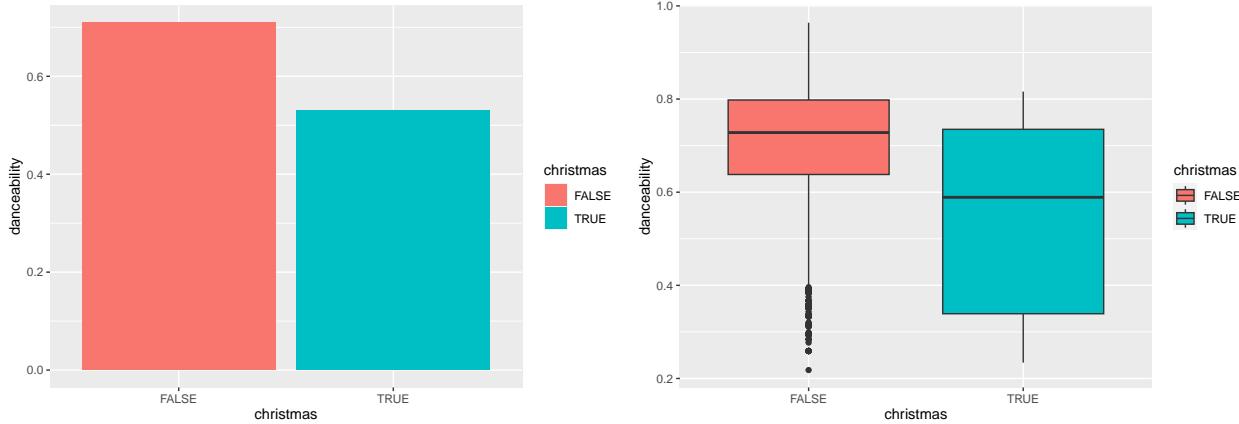
#### Descriptive statistics by group

group: FALSE

```
vars   n mean   sd median trimmed  mad min  max range skew kurtosis se
X1     1 8717 0.22 0.22    0.15      0.18 0.17  0 0.99 0.99 1.31    1.01  0
```

group: TRUE

```
vars   n mean   sd median trimmed  mad min  max range skew kurtosis se
X1     1 118 0.57 0.28    0.61      0.58 0.41 0.13 0.92 0.79 -0.22   -1.43 0.03
[1] "danceability and album_type"
```



#### Descriptive statistics by group

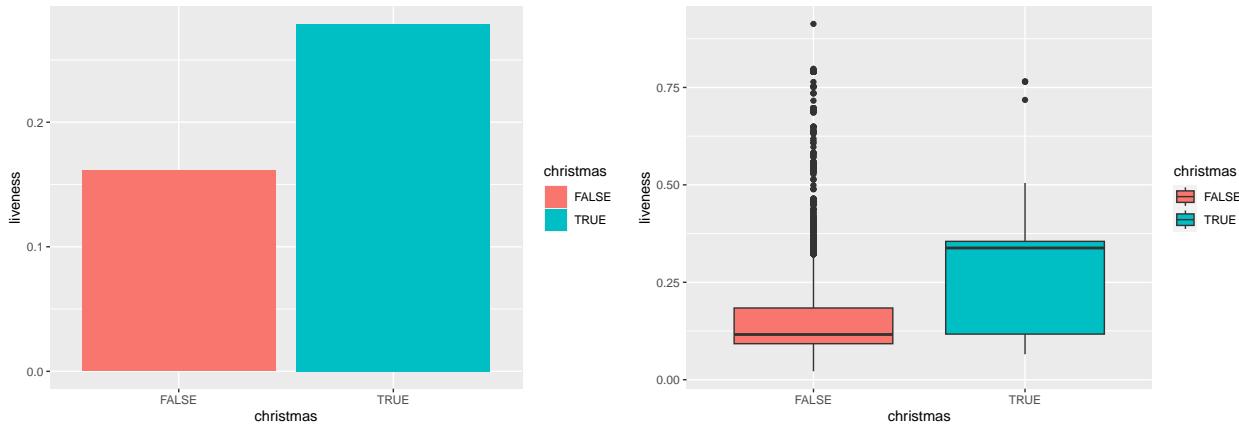
group: FALSE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	8717	0.71	0.13	0.73	0.72	0.72	0.12	0.22	0.96	0.75	-0.67	0.41

group: TRUE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	118	0.53	0.18	0.59	0.54	0.22	0.23	0.82	0.58	-0.21	-1.4	0.02

[1] "liveness and album\_type"



#### Descriptive statistics by group

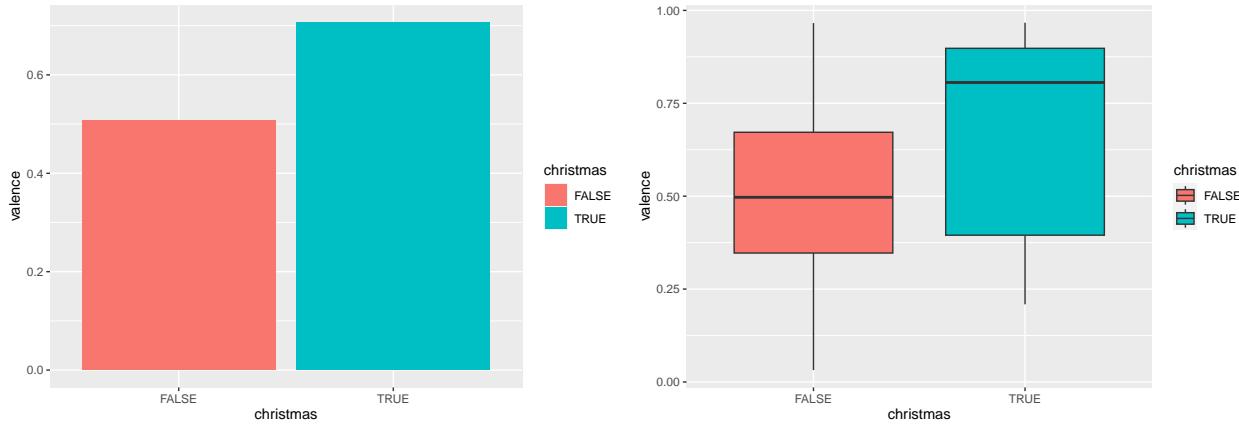
group: FALSE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	8717	0.16	0.12	0.12	0.12	0.14	0.05	0.02	0.91	0.89	2.43	7.39

group: TRUE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	118	0.28	0.18	0.34	0.26	0.25	0.07	0.76	0.7	0.66	0.15	0.02

[1] "valence and album\_type"



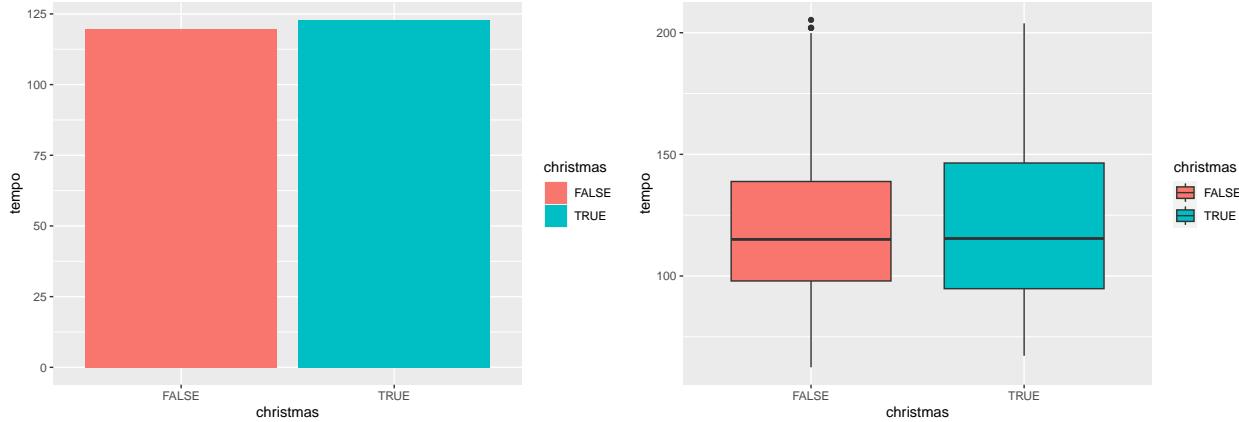
#### Descriptive statistics by group

group: FALSE

```
vars   n  mean   sd median trimmed  mad  min  max range skew kurtosis se
X1    1 8717 0.51 0.22     0.5    0.51 0.24 0.03 0.97 0.93 0.05   -0.74  0
```

group: TRUE

```
vars   n  mean   sd median trimmed  mad  min  max range skew kurtosis se
X1    1 118 0.71 0.25     0.81    0.73 0.21 0.21 0.97 0.76 -0.7   -1.09 0.02
[1] "tempo and album_type"
```



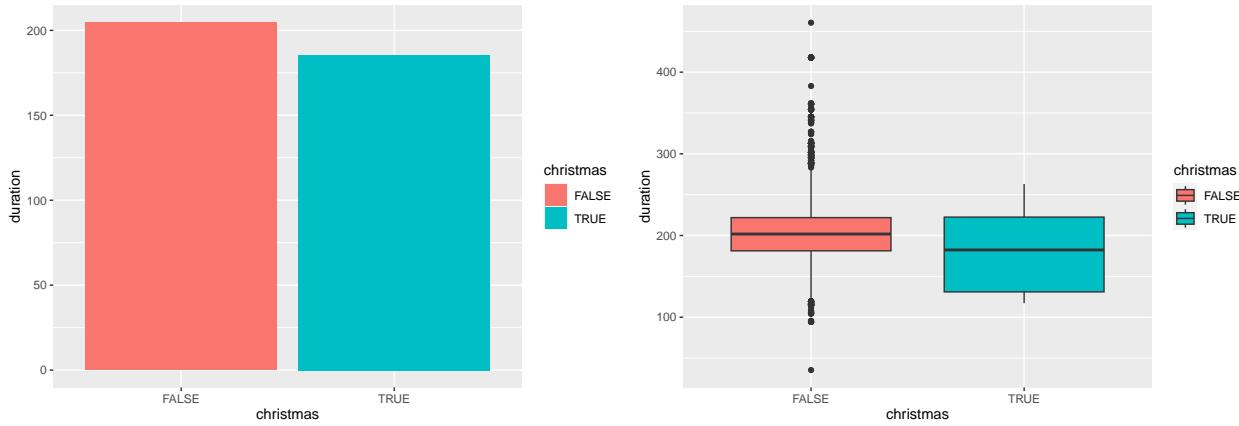
#### Descriptive statistics by group

group: FALSE

```
vars   n  mean   sd median trimmed  mad  min  max range skew
X1    1 8717 119.74 27.81 115.04 117.41 28.27 62.45 205.27 142.83 0.62
      kurtosis   se
X1    -0.41 0.3
```

group: TRUE

```
vars   n  mean   sd median trimmed  mad  min  max range skew kurtosis se
X1    1 118 122.88 39.62 115.41 120.18 30.63 67.2 203.86 136.67 0.7   -0.32
      se
X1  3.65
[1] "duration and album_type"
```



#### Descriptive statistics by group

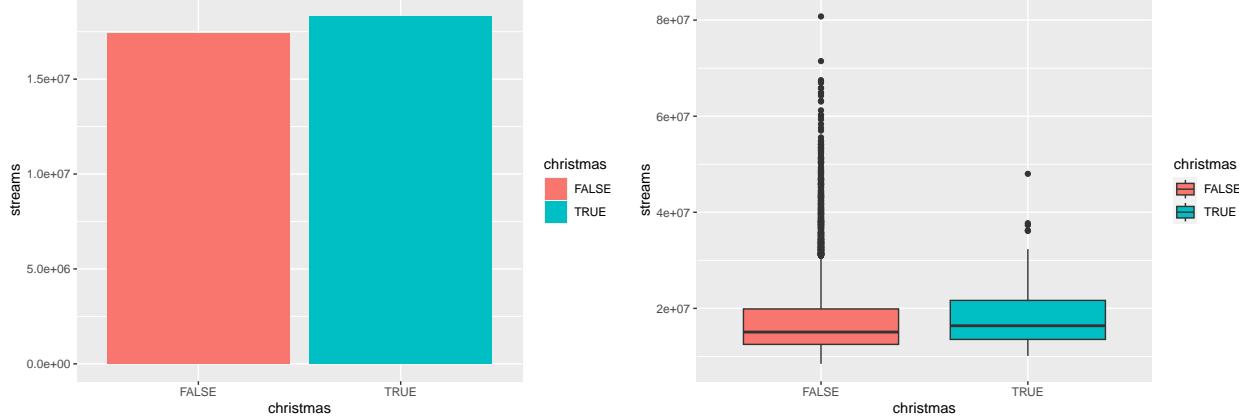
group: FALSE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew
X1	1	8717	204.52	38.49	201.82	202.16	29.98	35.24	460.57	425.33	1.17
	kurtosis										
X1			4.46	0.41							

group: TRUE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis
X1	1	118	185.47	49.15	182.33	183.87	63.4	117.15	262.96	145.81	0.18	-1.33
	se											
X1			4.52									

[1] "streams and album\_type"



#### Descriptive statistics by group

group: FALSE

	vars	n	mean	sd	median	trimmed	mad	min	max		
X1	1	8717	17392021	7275546	15070436	16118726	4622895	8454914	80764045		
	range										
X1			72309131	2.27			7.54	77925.94			

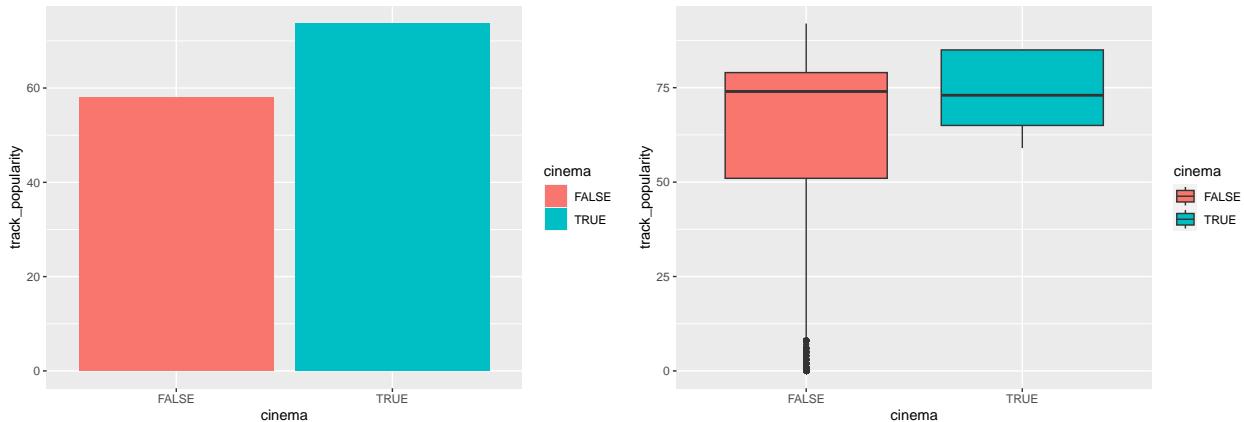
group: TRUE

	vars	n	mean	sd	median	trimmed	mad	min	max
X1	1	118	18303242	6547007	16386994	17381342	5493738	10104650	48011162

```

range skew kurtosis      se
X1 37906512 1.63      3.58 602700.8
[1] "track_popularity and album_type"

```



```

Descriptive statistics by group
group: FALSE

```

```

vars   n  mean    sd median trimmed   mad min max range skew kurtosis   se
X1     1 8797 58.09 31.74      74   61.92 10.38    0  92    92 -1.11    -0.55 0.34

```

```

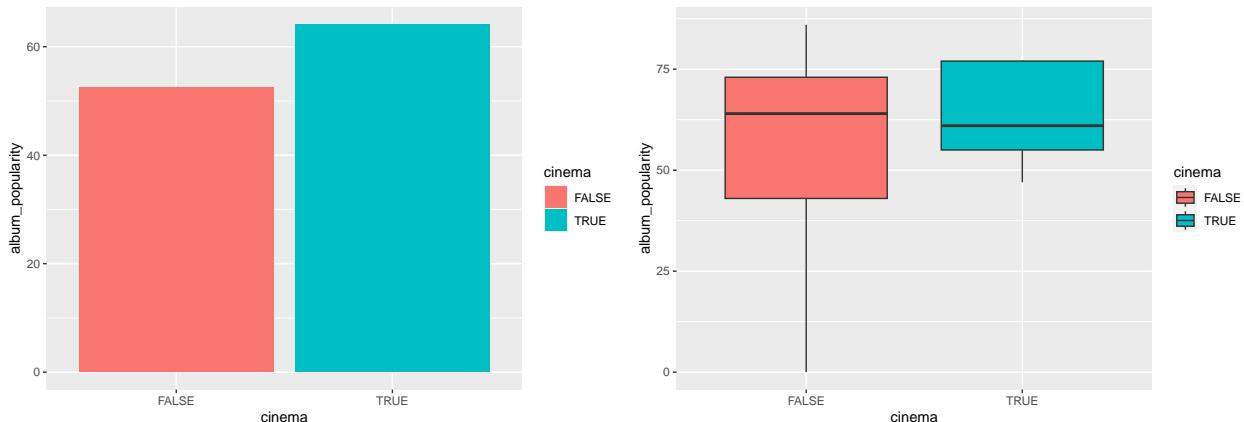
group: TRUE

```

```

vars   n  mean    sd median trimmed   mad min max range skew kurtosis   se
X1     1  38 73.68 9.97      73    74 14.83  59  85    26  0.04    -1.68 1.62
[1] "album_popularity and album_type"

```



```

Descriptive statistics by group
group: FALSE

```

```

vars   n  mean    sd median trimmed   mad min max range skew kurtosis   se
X1     1 8797 52.52 30.1      64   55.19 16.31    0  86    86 -0.94    -0.73 0.32

```

```

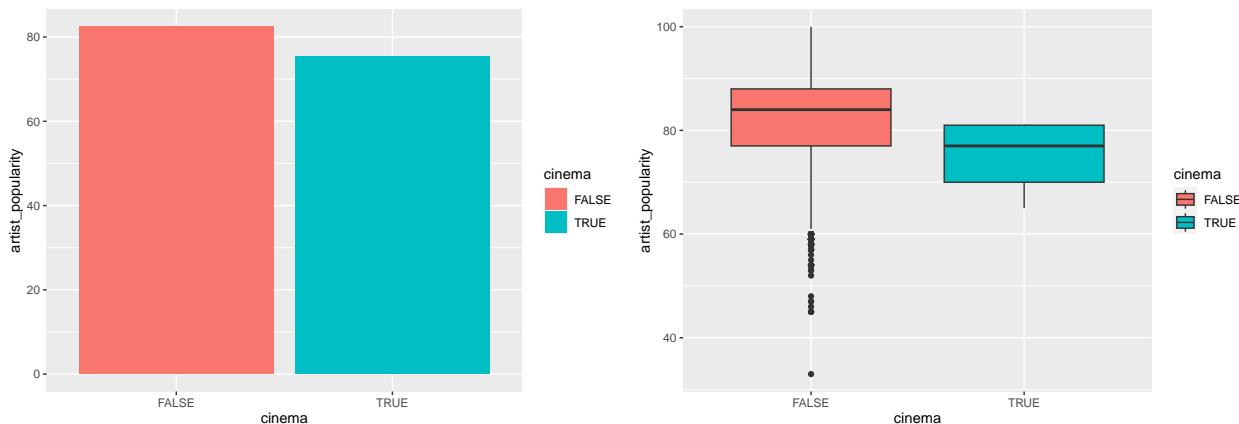
group: TRUE

```

```

vars   n  mean    sd median trimmed   mad min max range skew kurtosis   se
X1     1  38 64.05 11.39      61   64.44 16.31   47  77    30  0.03    -1.64 1.85
[1] "artist_popularity and album_type"

```



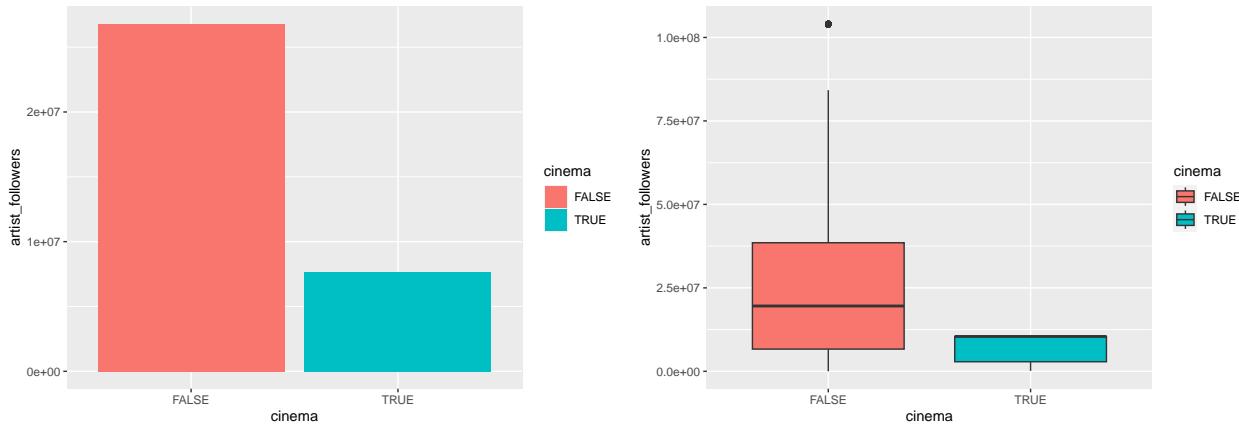
#### Descriptive statistics by group

group: FALSE

```
vars   n  mean   sd median trimmed  mad min max range skew kurtosis    se
X1     1 8797 82.46 8.55      84   83.03 7.41   33 100     67 -0.68      0.64 0.09
```

group: TRUE

```
vars   n  mean   sd median trimmed  mad min max range skew kurtosis    se
X1     1  38 75.32 5.7      77   75.75 5.93   65  81     16 -0.45      -1.24 0.93
[1] "artist_followers and album_type"
```



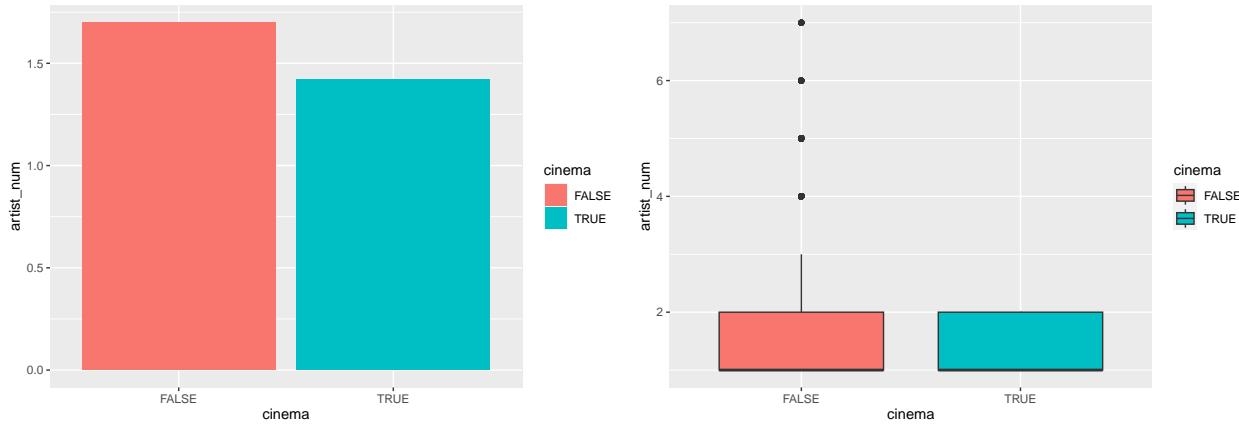
#### Descriptive statistics by group

group: FALSE

```
vars   n  mean   sd median trimmed  mad min max range skew kurtosis    se
X1     1 8797 26791377 25542034 19568883 23030189 22433058 3805 104059839
          range skew kurtosis    se
X1 104056034  1.2    0.87 272325.4
```

group: TRUE

```
vars   n  mean   sd median trimmed  mad min max range
X1     1  38 7666710 4367189 10444361 8075197 572162 145948 10830279 10684331
          skew kurtosis    se
X1 -0.99    -0.97 708451.6
[1] "artist_num and album_type"
```



#### Descriptive statistics by group

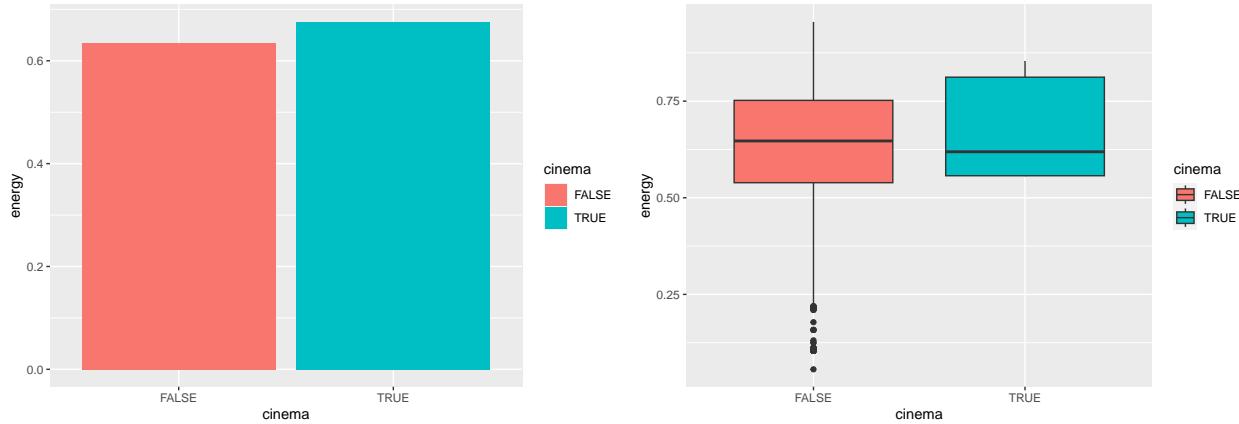
group: FALSE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se	
X1		1	8797	1.7	0.91	1	1.53	0	1	7	6	1.84	4.8	0.01

group: TRUE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se	
X1		1	38	1.42	0.5	1	1.41	0	1	2	1	0.31	-1.95	0.08

[1] "energy and album\_type"



#### Descriptive statistics by group

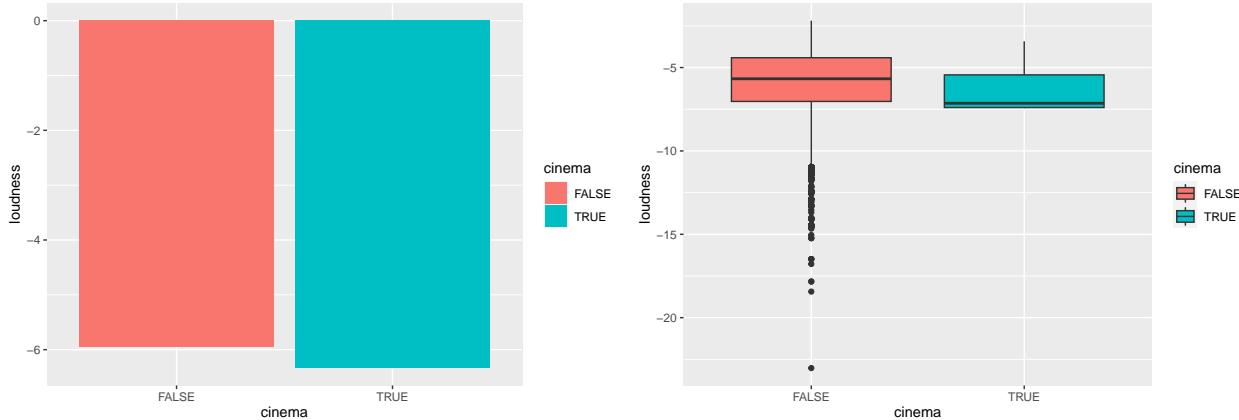
group: FALSE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se	
X1		1	8797	0.63	0.15	0.65	0.64	0.16	0.06	0.96	0.9	-0.51	-0.07	0

group: TRUE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se	
X1		1	38	0.68	0.12	0.62	0.67	0.09	0.56	0.85	0.3	0.35	-1.67	0.02

[1] "loudness and album\_type"



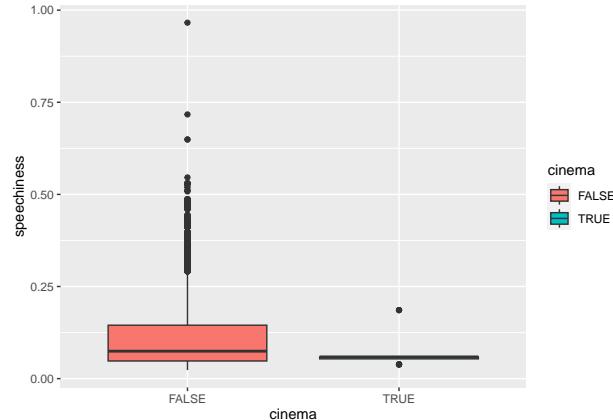
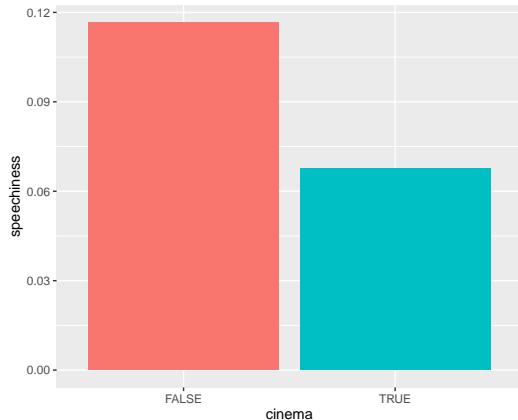
#### Descriptive statistics by group

group: FALSE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	8797	-5.95	2.14	-5.67	-5.75	1.93	-23.02	-2.19	20.84	-1.22	2.69	
													0.02

group: TRUE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	38	-6.34	1.46	-7.14	-6.51	0.38	-7.4	-3.42	3.97	1.08	-0.4	0.24
[1] "speechiness and album_type"													



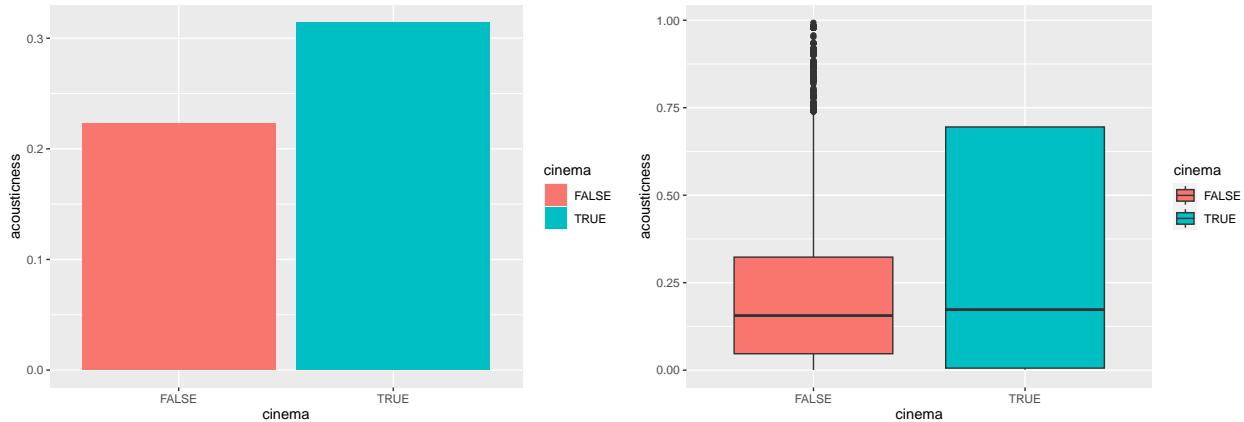
#### Descriptive statistics by group

group: FALSE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	8797	0.12	0.1	0.07	0.1	0.05	0.02	0.97	0.94	1.71	2.67	0

group: TRUE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	38	0.07	0.04	0.06	0.06	0.01	0.04	0.19	0.15	2.33	3.84	0.01



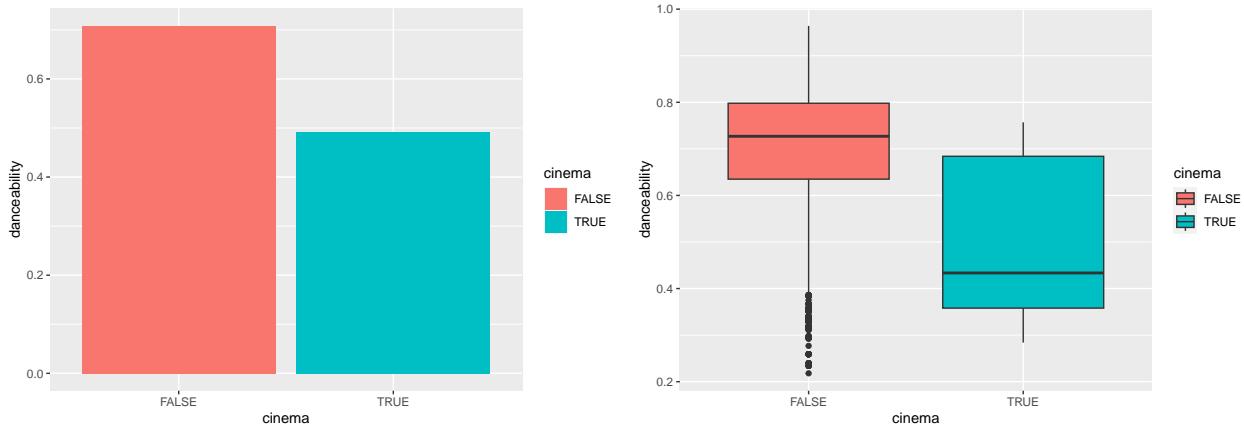
#### Descriptive statistics by group

group: FALSE

```
vars   n  mean   sd median trimmed   mad min  max range skew kurtosis se
X1     1 8797 0.22 0.22    0.16    0.19 0.18    0 0.99 0.99  1.3    0.95 0
```

group: TRUE

```
vars   n  mean   sd median trimmed   mad min  max range skew kurtosis se
X1     1  38 0.31 0.32    0.17    0.31 0.25    0 0.7 0.69 0.33 -1.84 0.05
[1] "danceability and album_type"
```



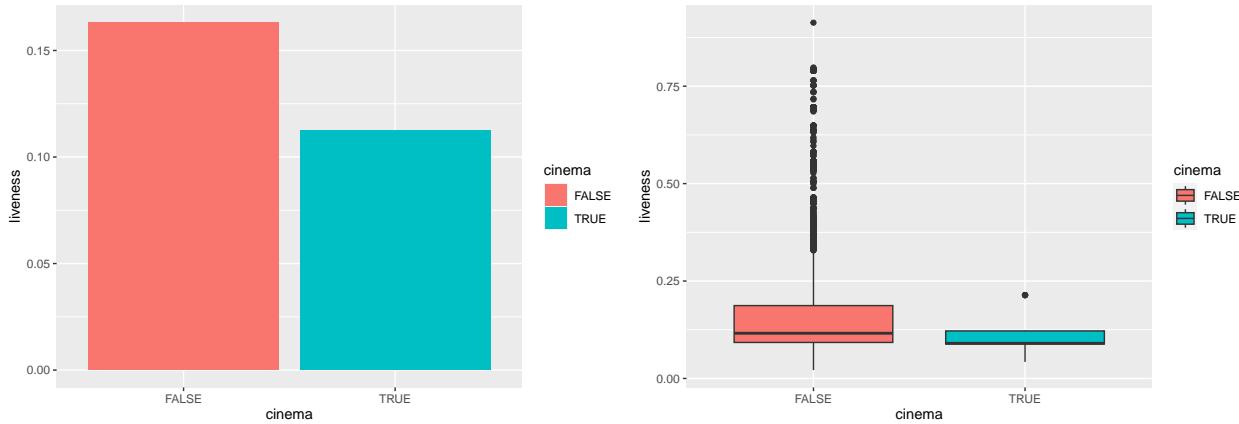
#### Descriptive statistics by group

group: FALSE

```
vars   n  mean   sd median trimmed   mad min  max range skew kurtosis se
X1     1 8797 0.71 0.13    0.73    0.72 0.12 0.22 0.96  0.75 -0.71    0.53 0
```

group: TRUE

```
vars   n  mean   sd median trimmed   mad min  max range skew kurtosis se
X1     1  38 0.49 0.17    0.43    0.49 0.11 0.28 0.76  0.47 0.42 -1.48 0.03
[1] "liveness and album_type"
```



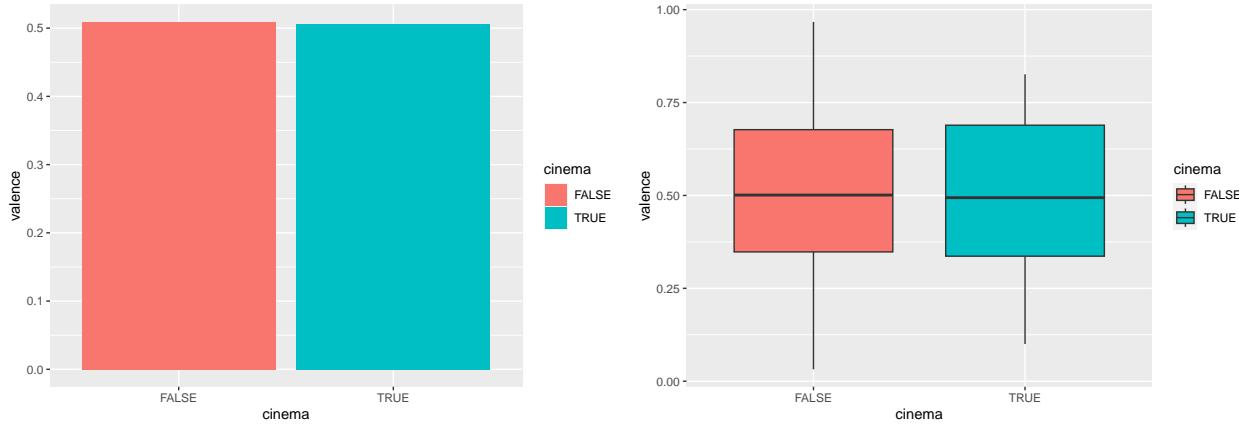
#### Descriptive statistics by group

group: FALSE

```
vars   n mean   sd median trimmed  mad min  max range skew kurtosis se
X1     1 8797 0.16 0.12    0.12    0.14 0.05 0.02 0.91  0.89 2.37    7.01  0
```

group: TRUE

```
vars   n mean   sd median trimmed  mad min  max range skew kurtosis se
X1     1  38 0.11 0.05    0.09    0.11 0.01 0.04 0.21  0.17 1.01   -0.17 0.01
[1] "valence and album_type"
```



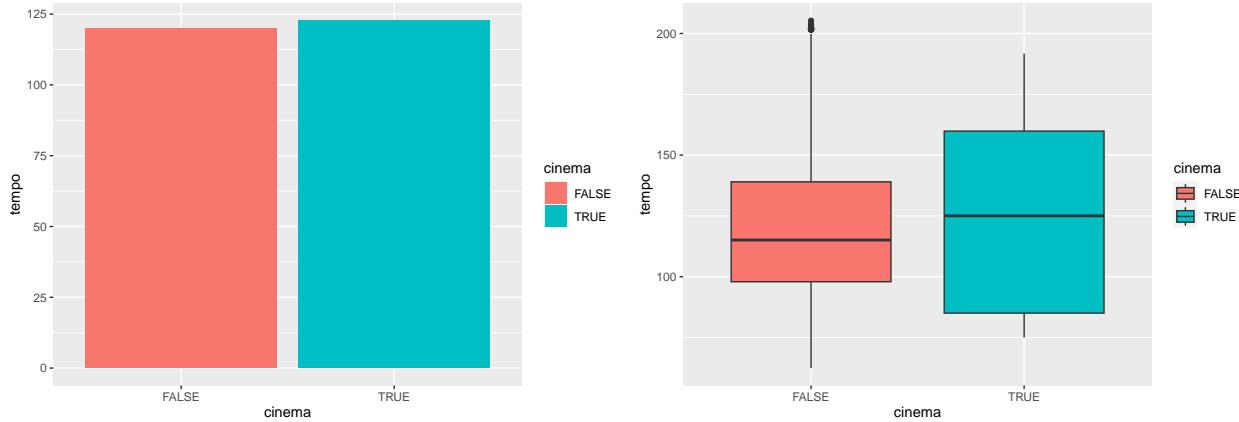
#### Descriptive statistics by group

group: FALSE

```
vars   n mean   sd median trimmed  mad min  max range skew kurtosis se
X1     1 8797 0.51 0.22    0.5     0.51 0.24 0.03 0.97  0.93 0.05   -0.75  0
```

group: TRUE

```
vars   n mean   sd median trimmed  mad min  max range skew kurtosis se
X1     1  38 0.51 0.22    0.49    0.51 0.29 0.1 0.83  0.73 -0.28   -0.85 0.04
[1] "tempo and album_type"
```



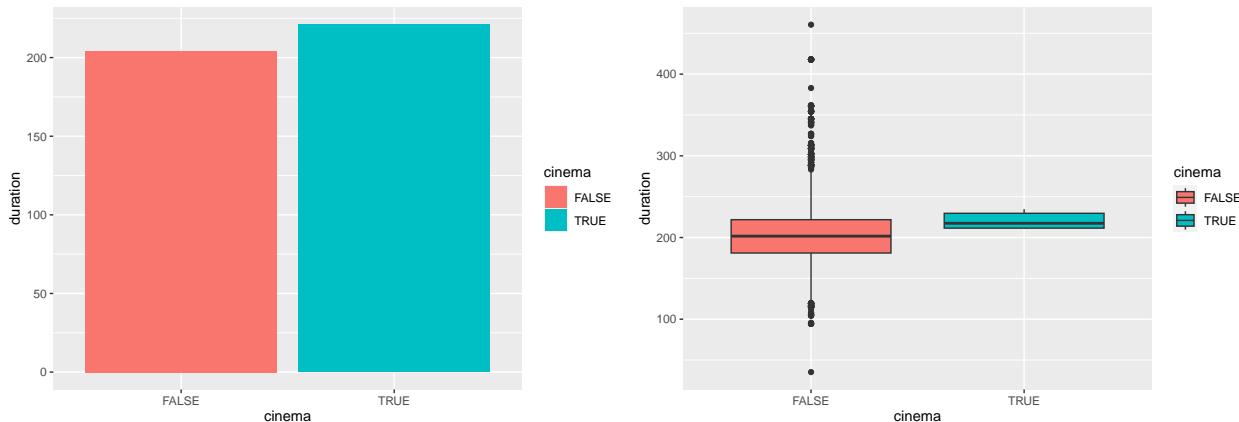
#### Descriptive statistics by group

group: FALSE

```
vars n mean sd median trimmed mad min max range skew
X1 1 8797 119.77 27.95 115.09 117.41 28.35 62.45 205.27 142.83 0.63
kurtosis se
X1 -0.36 0.3
```

group: TRUE

```
vars n mean sd median trimmed mad min max range skew kurtosis se
X1 1 38 122.68 39.44 125.05 120.37 59.31 75 191.7 116.7 0.32 -1.4 6.4
[1] "duration and album_type"
```



#### Descriptive statistics by group

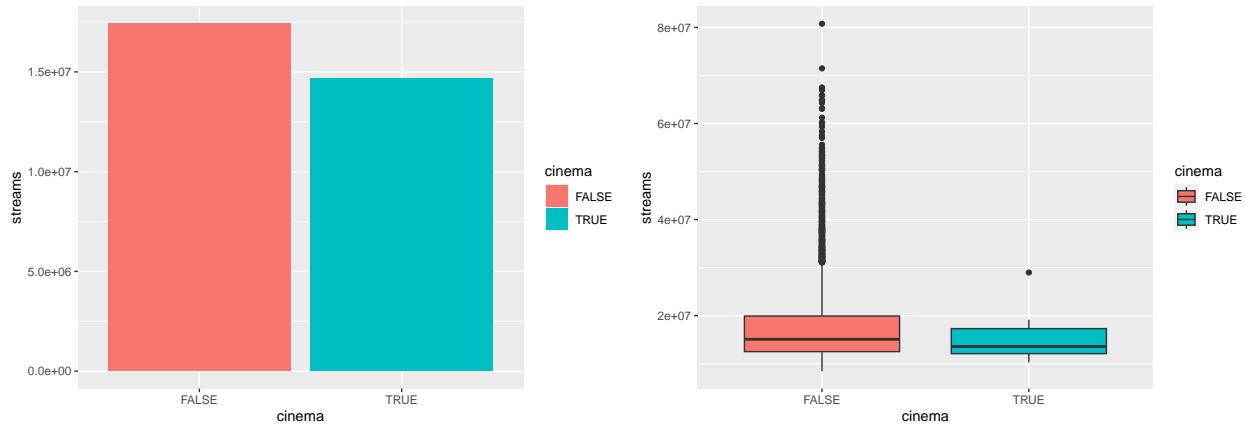
group: FALSE

```
vars n mean sd median trimmed mad min max range skew
X1 1 8797 204.19 38.77 201.66 201.92 30.24 35.24 460.57 425.33 1.14
kurtosis se
X1 4.3 0.41
```

group: TRUE

```
vars n mean sd median trimmed mad min max range skew kurtosis se
X1 1 38 220.93 9.11 217.44 220.52 8.86 211.47 234.71 23.24 0.18 -1.75
se
X1 1.48
```

```
[1] "streams and album_type"
```



Descriptive statistics by group

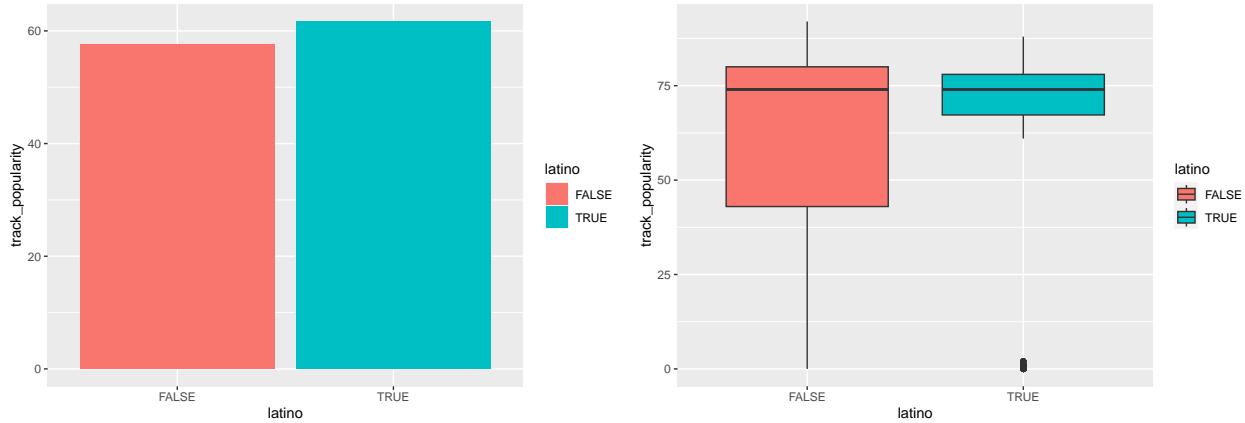
group: FALSE

	vars	n	mean	sd	median	trimmed	mad	min	max
X1	1	8797	17415932	7276288	15085613	16146186	4642113	8454914	80764045
			range	skew	kurtosis	se			
X1		72309131	2.26	7.48	77578.72				

group: TRUE

	vars	n	mean	sd	median	trimmed	mad	min	max
X1	1	38	14686024	3675858	13584252	14326290	3272794	10288625	28983124
			range	skew	kurtosis	se			
X1		18694499	1.57	3.56	596302.9				

```
[1] "track_popularity and album_type"
```



Descriptive statistics by group

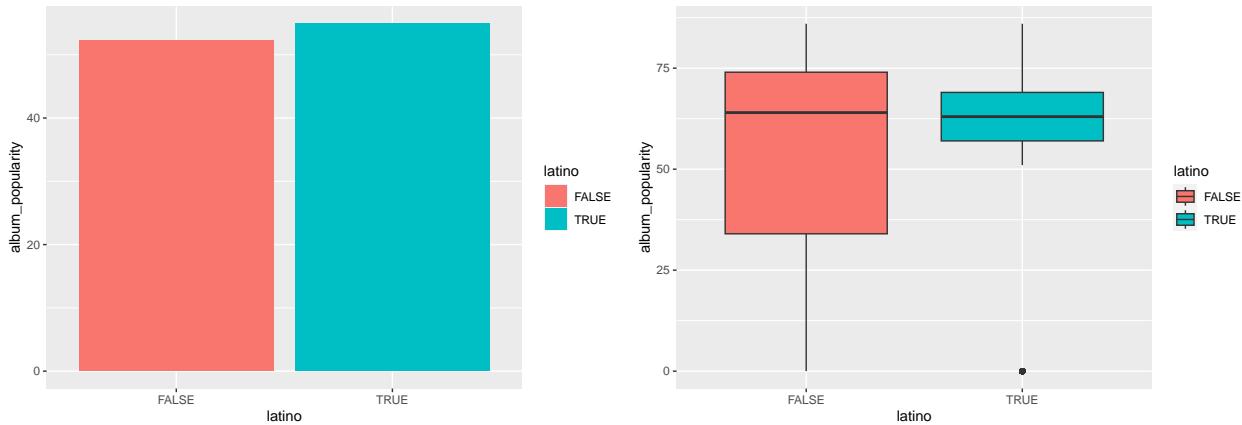
group: FALSE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	7769	57.68	32.05	74	61.37	11.86	0	92	92	-1.06	-0.65	0.36

group: TRUE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	1066	61.67	28.72	74	66.7	5.93	0	88	88	-1.6	-0.71	0.88

```
[1] "album_popularity and album_type"
```



Descriptive statistics by group

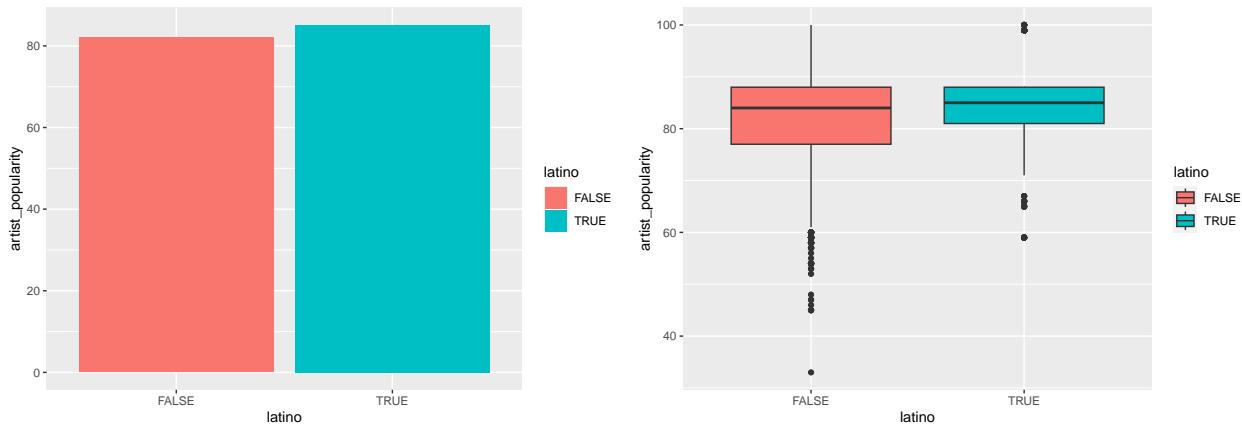
group: FALSE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	7769	52.25	30.48	64	54.86	17.79	0	86	86	-0.9	-0.83	0.35

group: TRUE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	1066	54.9	26.62	63	58.05	8.9	0	86	86	-1.34	0.39	0.82

```
[1] "artist_popularity and album_type"
```



Descriptive statistics by group

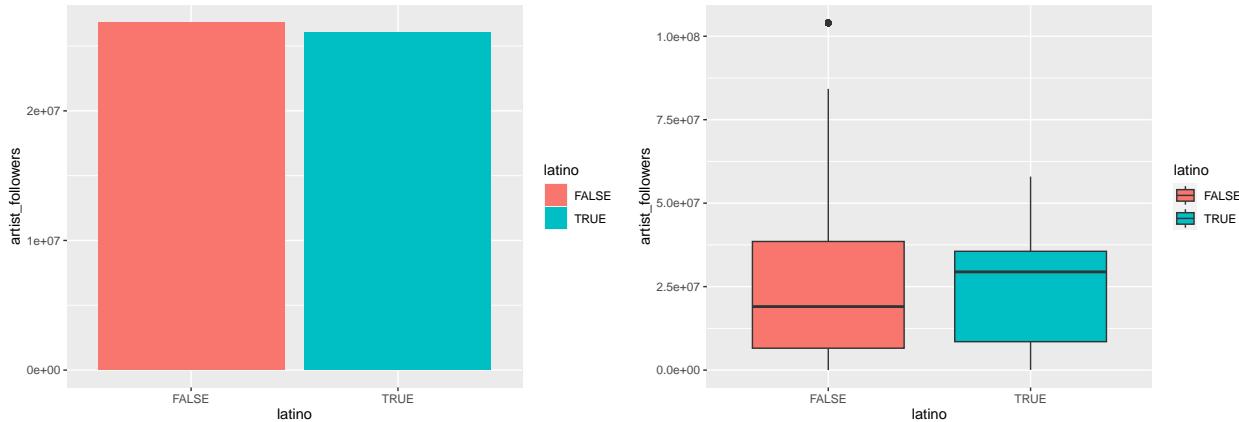
group: FALSE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	7769	82.06	8.5	84	82.76	7.41	33	100	67	-0.76	0.57	0.1

group: TRUE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	1066	85.12	8.48	85	85.29	4.45	59	100	41	-0.11	0.31	0.26

```
[1] "artist_followers and album_type"
```



#### Descriptive statistics by group

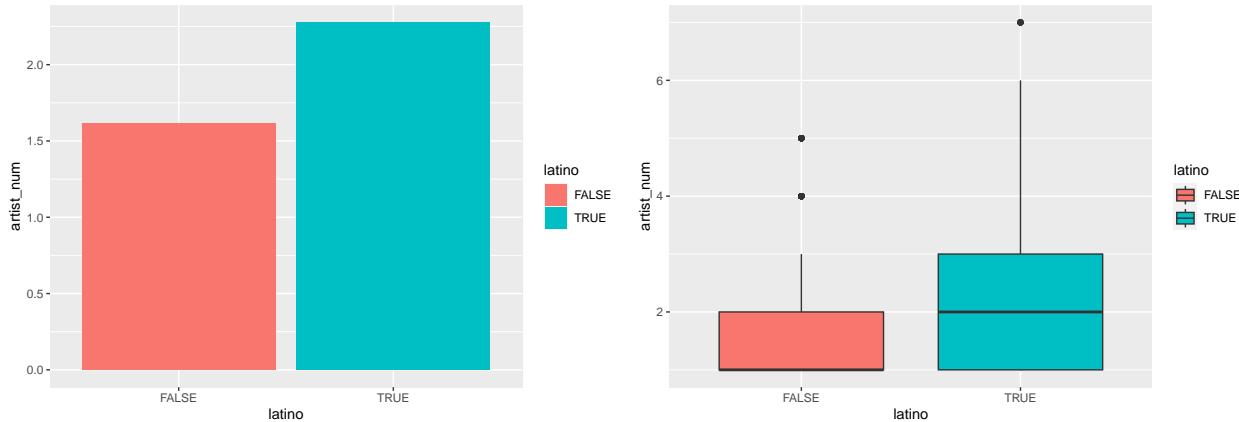
group: FALSE

	vars	n	mean	sd	median	trimmed	mad	min	max
X1	1	7769	26803878	26295246	19022087	22802048	22860107	3805	104059839
	range	skew	kurtosis	se					
X1	104056034	1.23	0.83	298328.5					

group: TRUE

	vars	n	mean	sd	median	trimmed	mad	min	max
X1	1	1066	26018522	18922418	29419215	25136671	26895523	42127	57945768
	range	skew	kurtosis	se					
X1	57903641	0.38	-0.98	579559.5					

[1] "artist\_num and album\_type"



#### Descriptive statistics by group

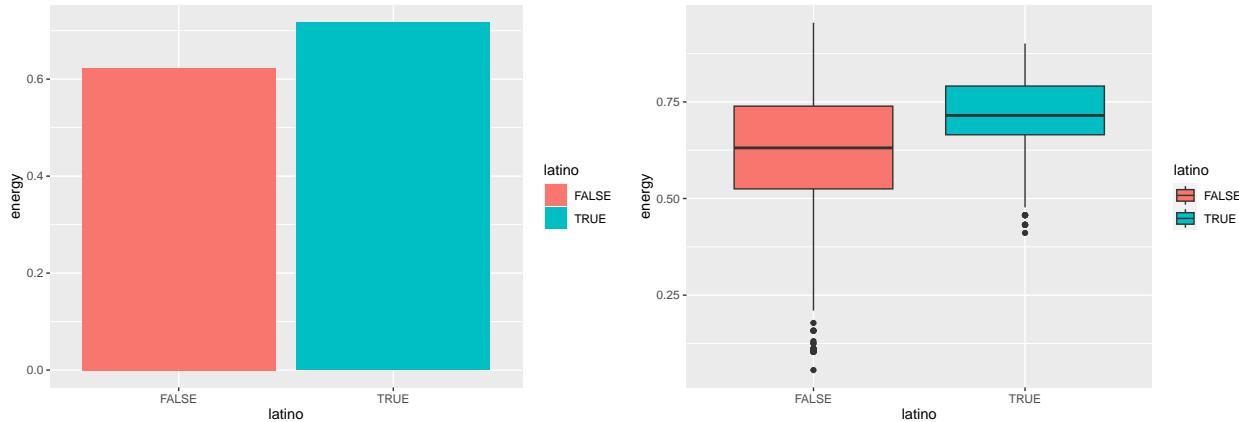
group: FALSE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	7769	1.62	0.78	1	1.48	0	1	5	4	1.37	1.99	0.01

group: TRUE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	1066	2.28	1.4	2	2.02	1.48	1	7	6	1.47	1.65	0.04

[1] "energy and album\_type"



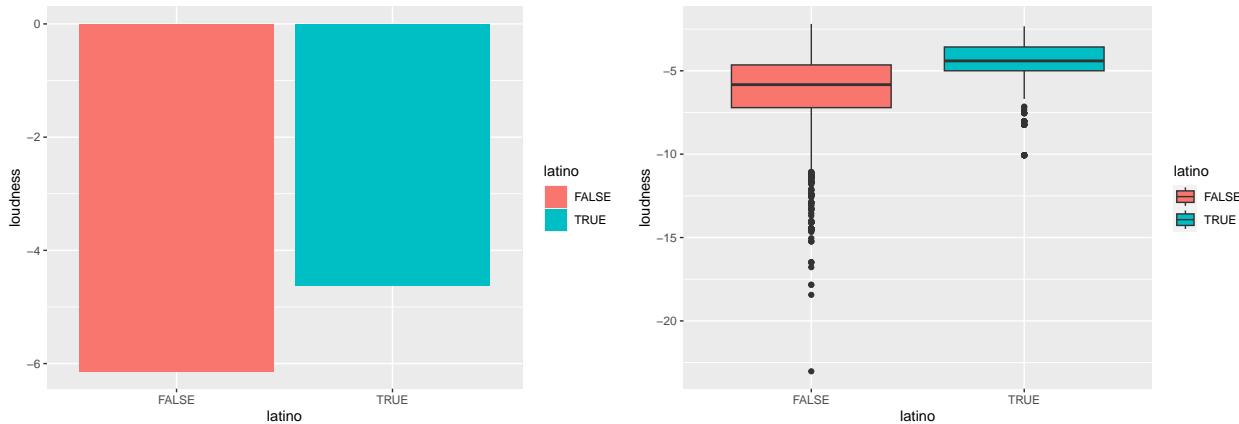
#### Descriptive statistics by group

group: FALSE

```
vars   n  mean   sd median trimmed  mad  min  max range skew kurtosis se
X1    1 7769 0.62 0.15   0.63    0.63 0.16 0.06 0.96 0.9 -0.41   -0.16 0
```

group: TRUE

```
vars   n  mean   sd median trimmed  mad  min  max range skew kurtosis se
X1    1 1066 0.72 0.09   0.72    0.72 0.11 0.41 0.9  0.49 -0.6   -0.09 0
[1] "loudness and album_type"
```



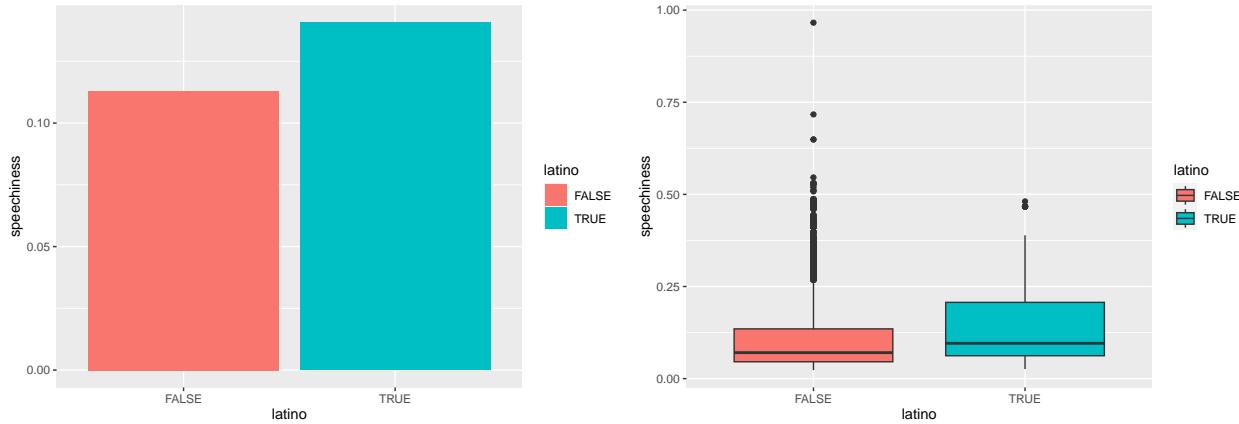
#### Descriptive statistics by group

group: FALSE

```
vars   n  mean   sd median trimmed  mad  min  max range skew kurtosis se
X1    1 7769 -6.14 2.15   -5.83   -5.94 1.86 -23.02 -2.19 20.84 -1.18   2.68
      se
X1  0.02
```

group: TRUE

```
vars   n  mean   sd median trimmed  mad  min  max range skew kurtosis se
X1    1 1066 -4.61 1.46   -4.41   -4.44 1.06 -10.06 -2.33  7.73 -1.47   2.96
      se
X1  0.04
[1] "speechiness and album_type"
```



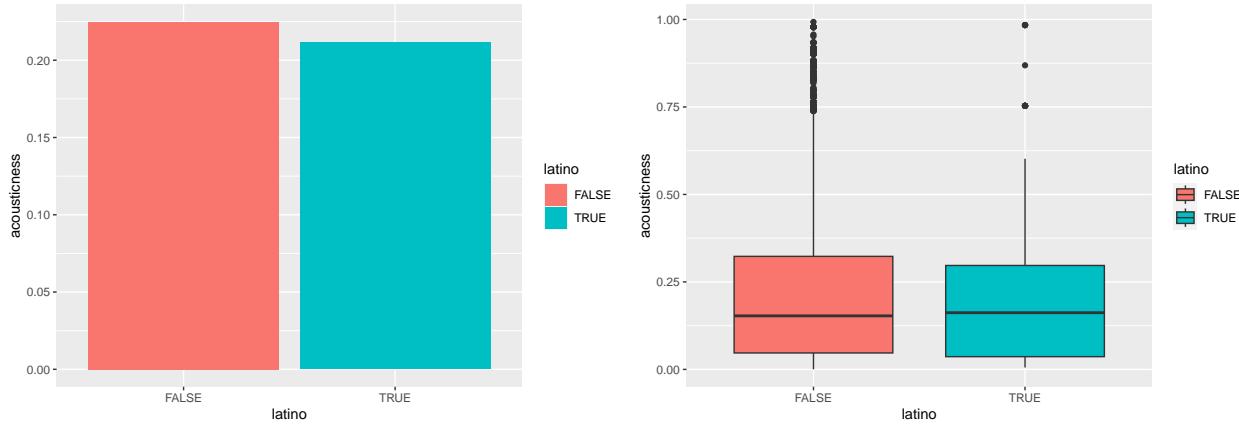
#### Descriptive statistics by group

group: FALSE

```
vars      n   mean    sd median trimmed   mad   min   max range skew kurtosis se
X1      1 7769 0.11 0.1     0.07    0.09 0.05 0.02 0.97 0.94 1.81     3.18 0
```

group: TRUE

```
vars      n   mean    sd median trimmed   mad   min   max range skew kurtosis se
X1      1 1066 0.14 0.1     0.1     0.13 0.06 0.03 0.48 0.46 1.16     0.23 0
[1] "acousticness and album_type"
```



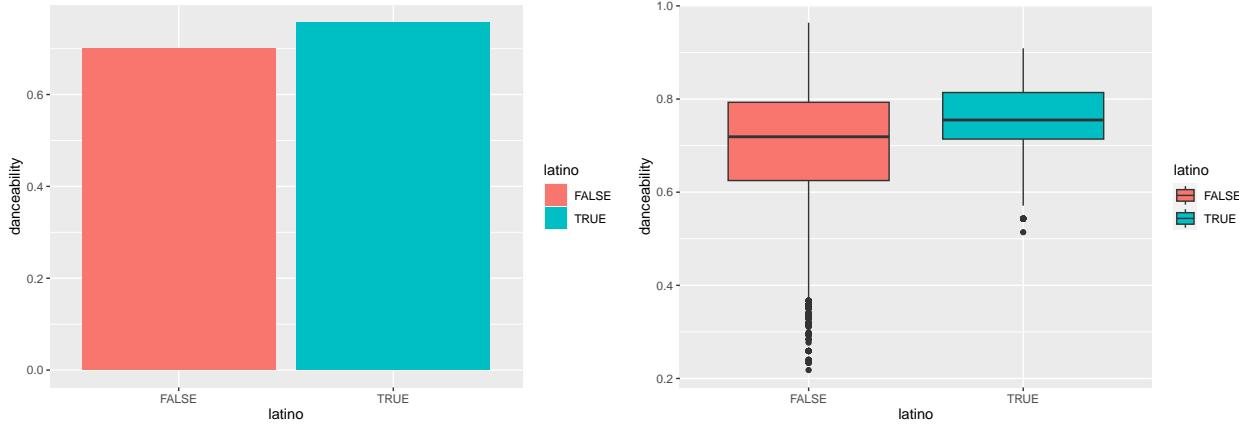
#### Descriptive statistics by group

group: FALSE

```
vars      n   mean    sd median trimmed   mad   min   max range skew kurtosis se
X1      1 7769 0.22 0.23     0.15    0.19 0.17 0 0.99 0.99 1.29     0.82 0
```

group: TRUE

```
vars      n   mean    sd median trimmed   mad   min   max range skew kurtosis se
X1      1 1066 0.21 0.19     0.16    0.19 0.19 0.01 0.98 0.98 1.21     1.5 0.01
[1] "danceability and album_type"
```



#### Descriptive statistics by group

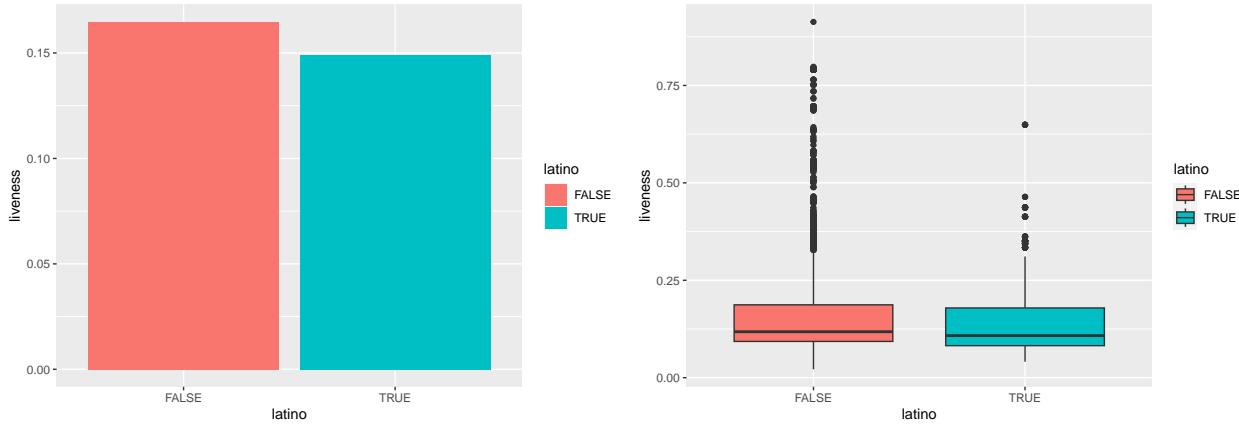
group: FALSE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	7769	0.7	0.13	0.72	0.71	0.71	0.12	0.22	0.96	0.75	-0.66	0.39

group: TRUE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	1066	0.76	0.09	0.76	0.76	0.76	0.08	0.51	0.91	0.4	-0.52	-0.17

[1] "liveness and album\_type"



#### Descriptive statistics by group

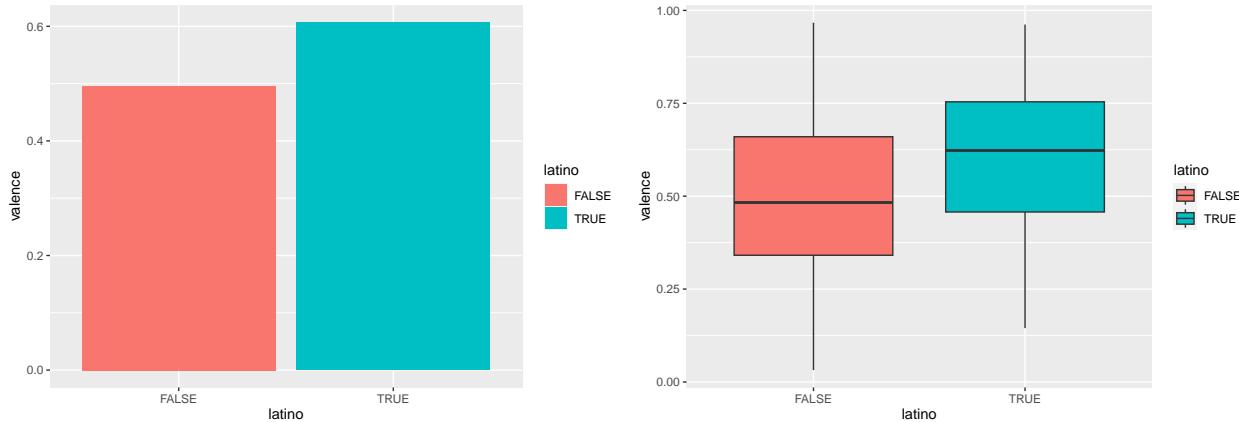
group: FALSE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	7769	0.16	0.12	0.12	0.14	0.14	0.05	0.02	0.91	0.89	2.42	7.17

group: TRUE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	1066	0.15	0.1	0.11	0.13	0.06	0.04	0.65	0.61	1.8	3.65	0

[1] "valence and album\_type"



#### Descriptive statistics by group

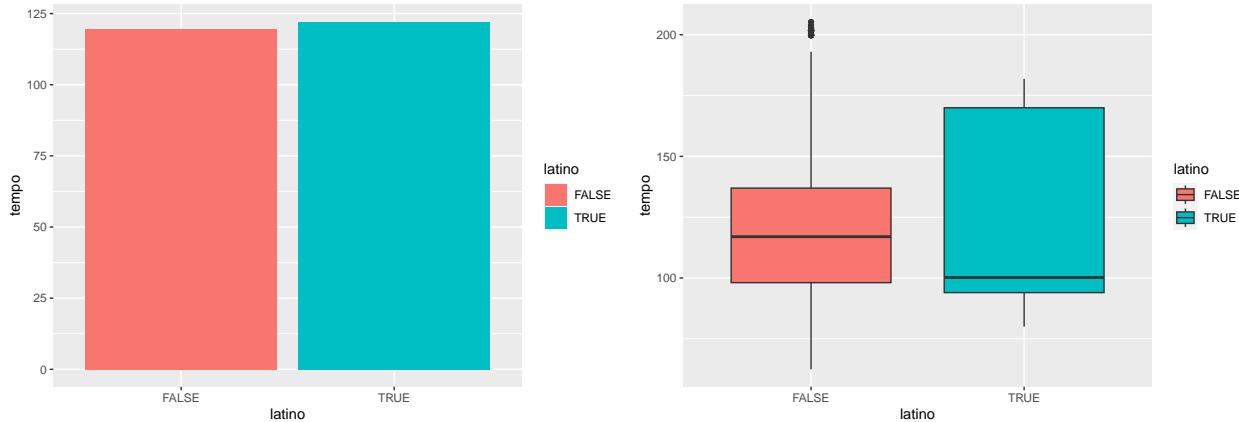
group: FALSE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	7769	0.5	0.22	0.48	0.49	0.23	0.03	0.97	0.93	0.14	-0.7	0

group: TRUE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	1066	0.61	0.19	0.62	0.62	0.2	0.14	0.96	0.82	-0.54	-0.27	0.01

[1] "tempo and album\_type"



#### Descriptive statistics by group

group: FALSE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew
X1	1	7769	119.47	26.53	116.97	117.62	28.15	62.45	205.27	142.83	0.58

kurtosis se

X1 -0.15 0.3

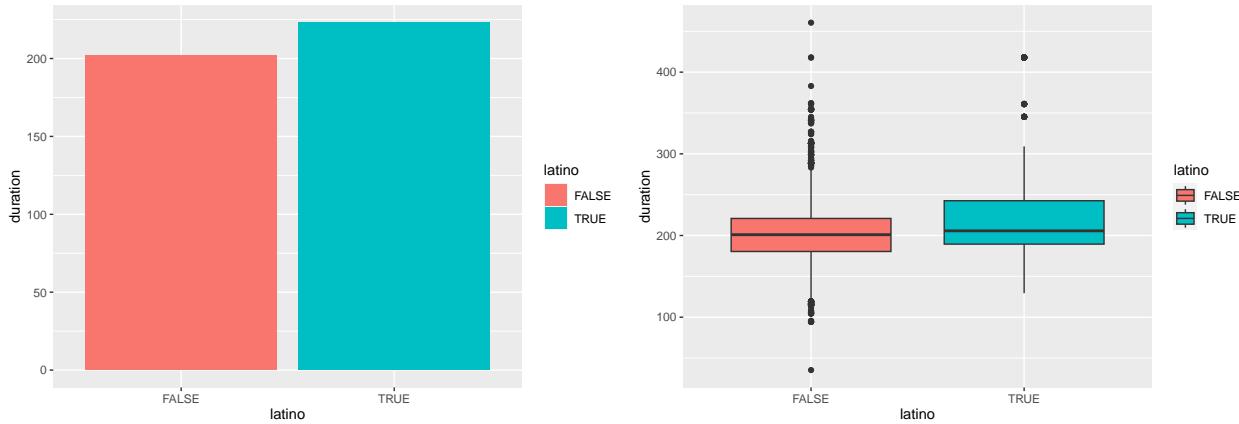
group: TRUE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis
X1	1	1066	122.07	36.94	100.2	119.56	12.2	79.99	181.88	101.89	0.63	-1.44

se

X1 1.13

[1] "duration and album\_type"



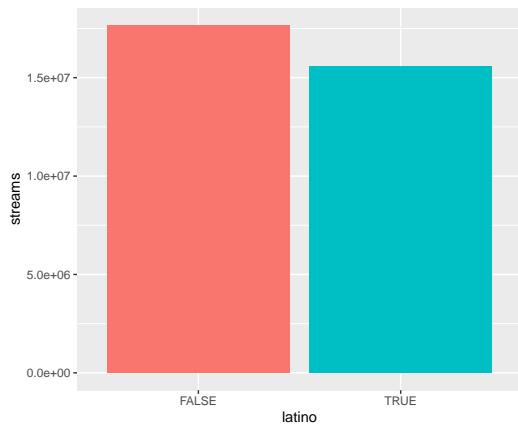
#### Descriptive statistics by group

group: FALSE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew
X1	1	7769	201.69	35.39	201	200.6	29.92	35.24	460.57	425.33	0.62
	kurtosis										
X1		2.46	0.4								

group: TRUE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew
X1	1	1066	223.01	53.77	205.71	215.57	35.78	129.37	417.92	288.55	1.58
	kurtosis										
X1		3.03	1.65								
[1] "streams and album_type"											



#### Descriptive statistics by group

group: FALSE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew
X1	1	7769	17655735	7417473	15364663	16375420	4884541	8454914	80764045		
	kurtosis										
X1		72309131	2.23	7.28	84153.74						

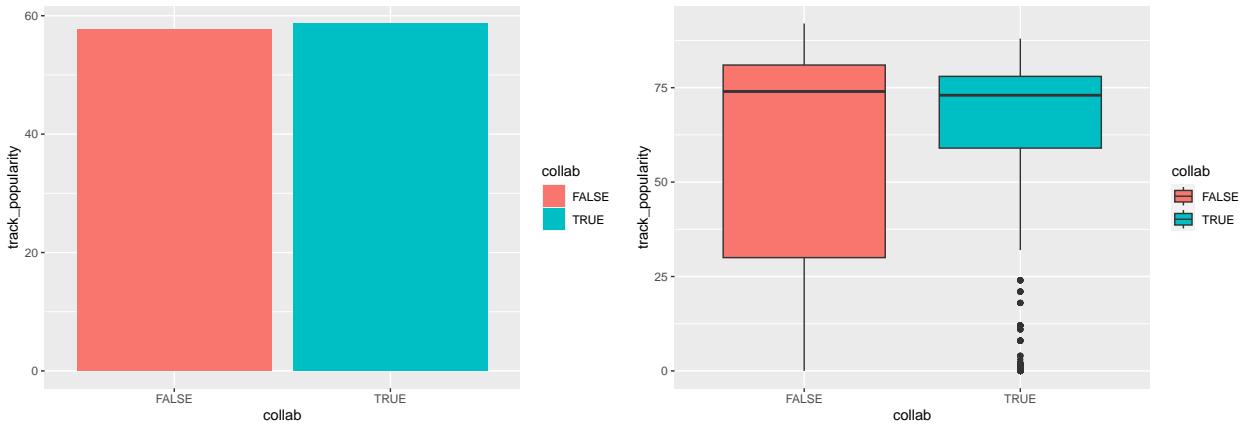
group: TRUE

	vars	n	mean	sd	median	trimmed	mad	min	max
X1	1	1066	15570942	5734302	13792321	14487432	3230690	8739078	53344093

```

range skew kurtosis      se
X1 44605015  2.4    7.96 175631.3
[1] "track_popularity and album_type"

```



Descriptive statistics by group  
group: FALSE

```

vars   n  mean   sd median trimmed  mad min max range skew kurtosis   se
X1     1 4438 57.64 32.65      74   61.18 13.34    0  92   92    -1   -0.78 0.49

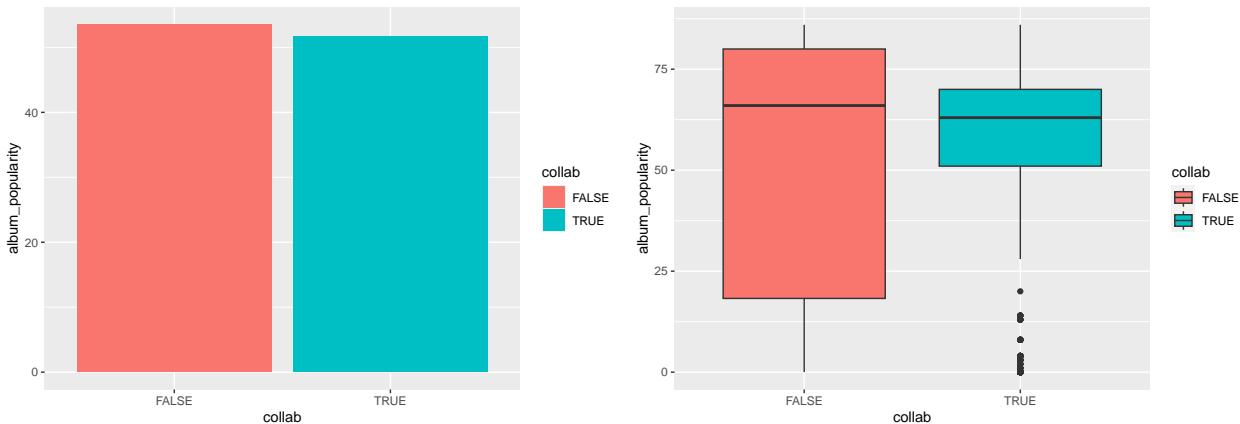
```

group: TRUE

```

vars   n  mean   sd median trimmed  mad min max range skew kurtosis   se
X1     1 4397 58.69 30.69      73   62.9  8.9    0  88   88   -1.25   -0.24 0.46
[1] "album_popularity and album_type"

```



Descriptive statistics by group  
group: FALSE

```

vars   n  mean   sd median trimmed  mad min max range skew kurtosis   se
X1     1 4438 53.49 32.02      66   56.29 22.24    0  86   86   -0.84   -0.97 0.48

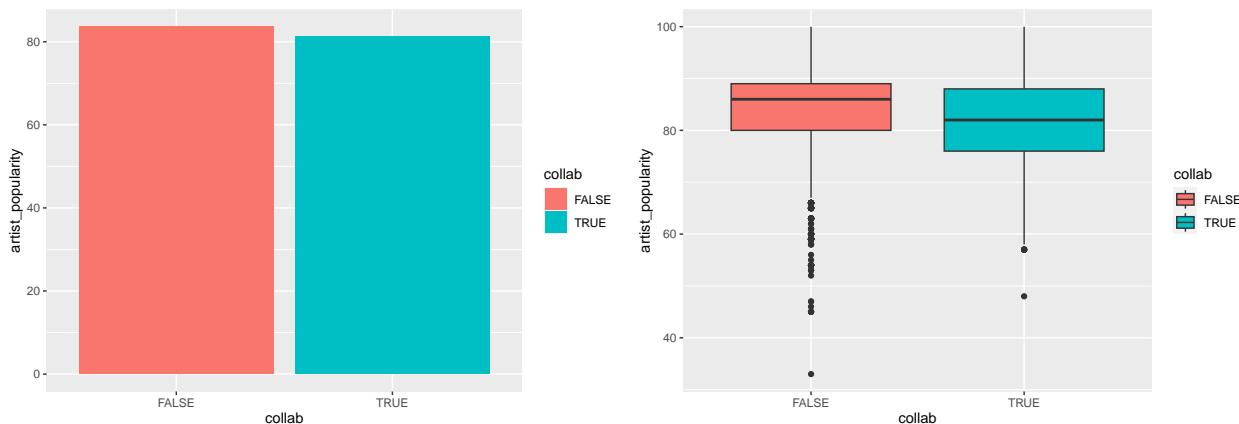
```

group: TRUE

```

vars   n  mean   sd median trimmed  mad min max range skew kurtosis   se
X1     1 4397 51.64 27.9      63   54.55 10.38    0  86   86   -1.12   -0.38 0.42
[1] "artist_popularity and album_type"

```



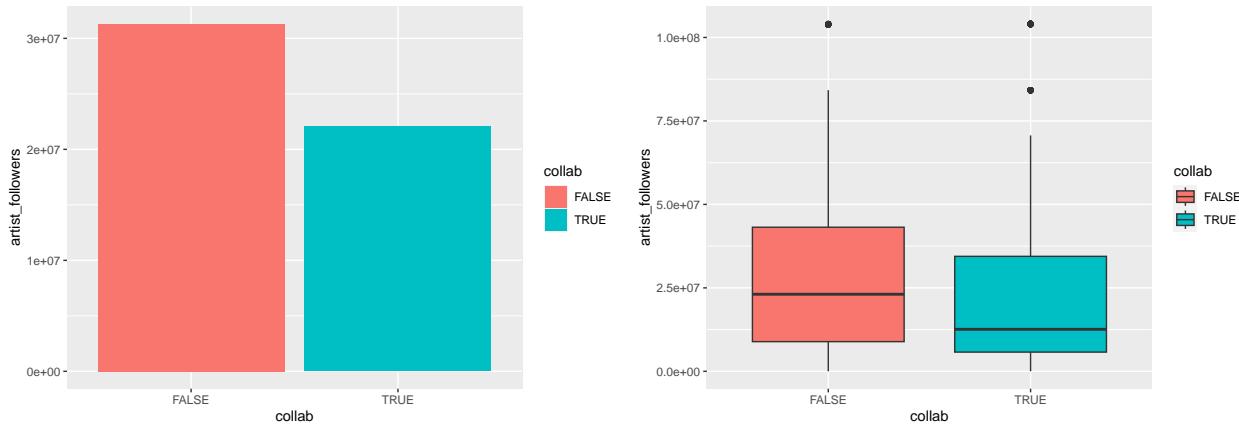
#### Descriptive statistics by group

group: FALSE

```
vars   n   mean    sd median trimmed mad min max range skew kurtosis   se
X1     1 4438 83.64 8.69      86   84.43 5.93   33 100     67 -1.02      1.4 0.13
```

group: TRUE

```
vars   n   mean    sd median trimmed mad min max range skew kurtosis   se
X1     1 4397 81.21 8.23      82   81.57 8.9    48 100     52 -0.34      0.2 0.12
[1] "artist_followers and album_type"
```



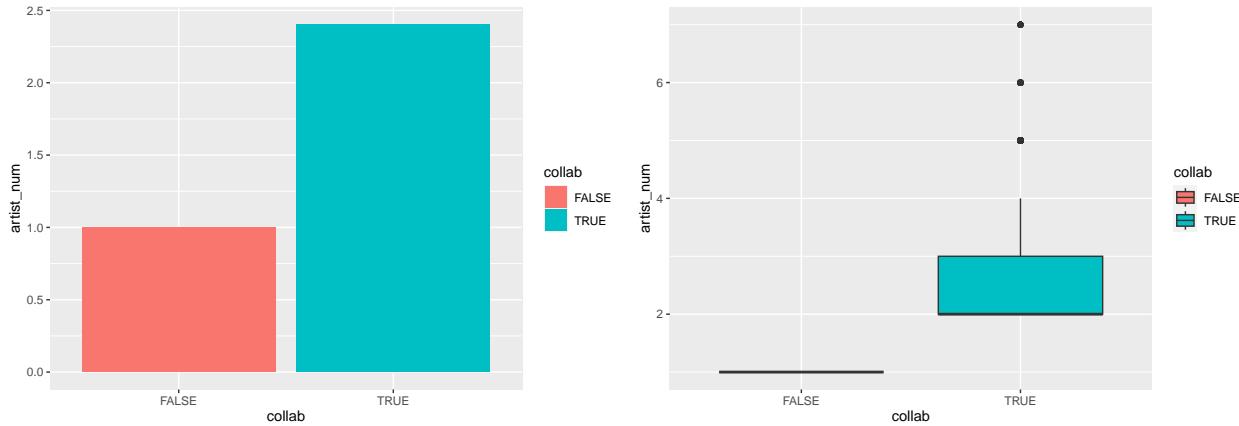
#### Descriptive statistics by group

group: FALSE

```
vars   n   mean    sd median trimmed mad min max range skew kurtosis   se
X1     1 4438 31303242 27296395 23090016 28011555 23050514 3805 104059839
          range skew kurtosis   se
X1 104056034 0.93      0.03 409743.1
```

group: TRUE

```
vars   n   mean    sd median trimmed mad min max range skew kurtosis   se
X1     1 4397 22072160 22667971 12596174 18237673 15946789 14787 104059839
          range skew kurtosis   se
X1 104045052 1.56      2.45 341849.1
[1] "artist_num and album_type"
```



#### Descriptive statistics by group

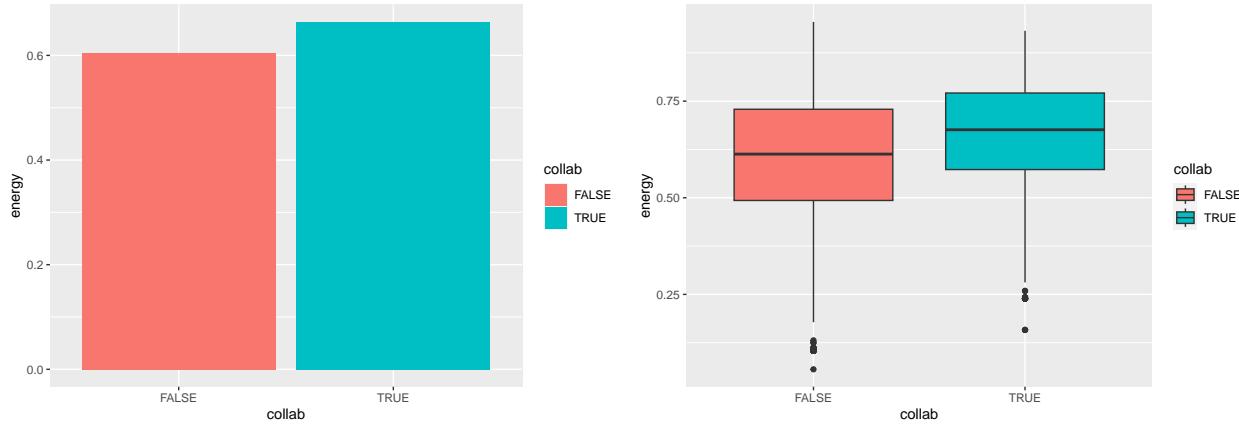
group: FALSE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	4438	1	0	1	1	0	1	1	0	Nan	Nan	0

group: TRUE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	4397	2.4	0.81	2	2	2.2	0	2	7	5	2.49	6.87

[1] "energy and album\_type"



#### Descriptive statistics by group

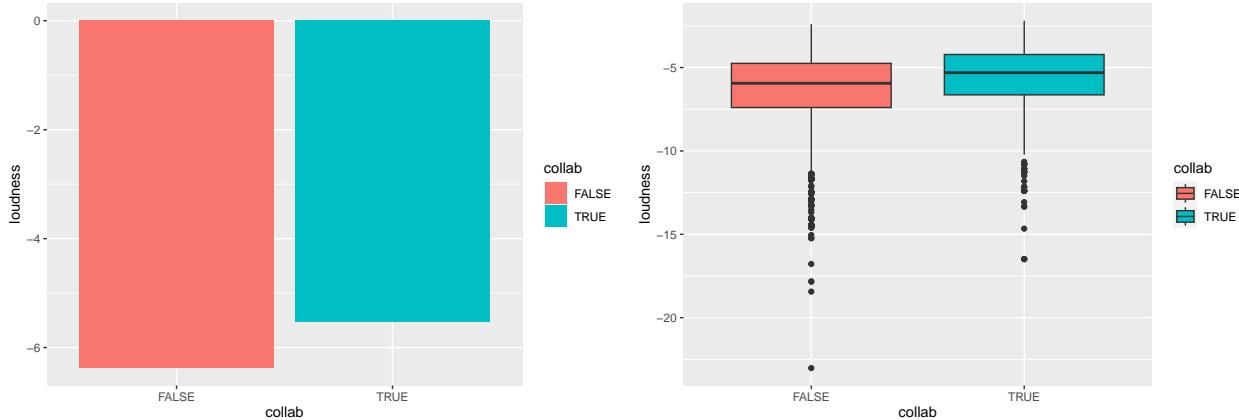
group: FALSE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	4438	0.6	0.16	0.61	0.61	0.61	0.17	0.06	0.96	0.9	-0.37	-0.22

group: TRUE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	4397	0.66	0.13	0.68	0.67	0.67	0.14	0.16	0.93	0.77	-0.54	-0.08

[1] "loudness and album\_type"



#### Descriptive statistics by group

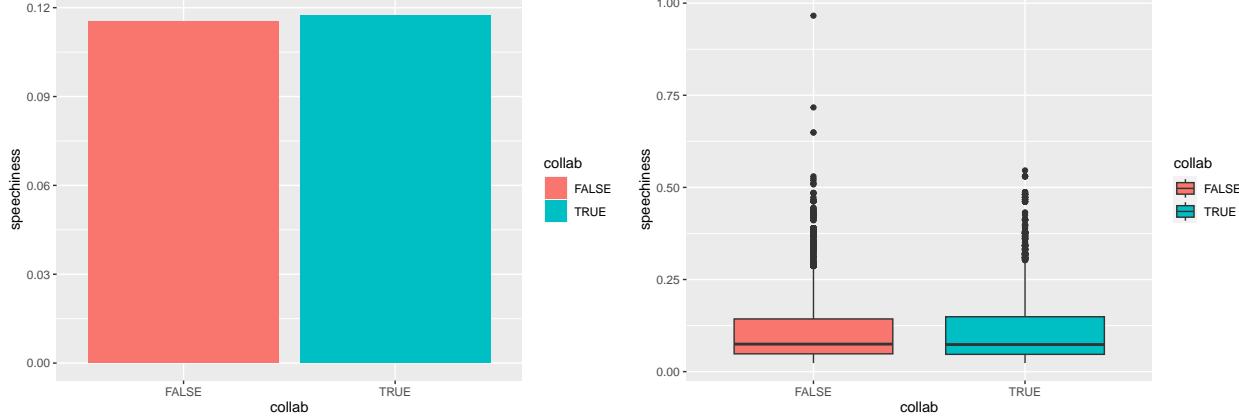
group: FALSE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	4438	-6.38	2.37	-5.94	-6.13	2	-23.02	-2.4	20.63	-1.2	2.14	0.04

group: TRUE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	4397	-5.53	1.77	-5.31	-5.42	1.72	-16.48	-2.19	14.3	-0.8	1.56	
X1	0.03												

[1] "speechiness and album\_type"



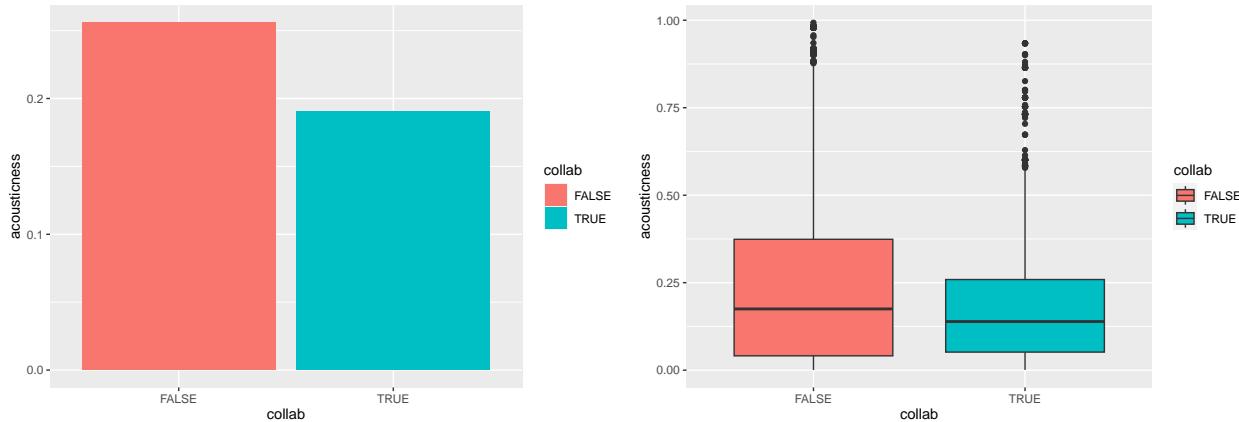
#### Descriptive statistics by group

group: FALSE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	4438	0.12	0.1	0.07	0.09	0.05	0.02	0.97	0.94	1.82	3.35	0

group: TRUE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	4397	0.12	0.1	0.07	0.1	0.05	0.02	0.55	0.52	1.6	2	0
[1]	"acousticness and album_type"												



#### Descriptive statistics by group

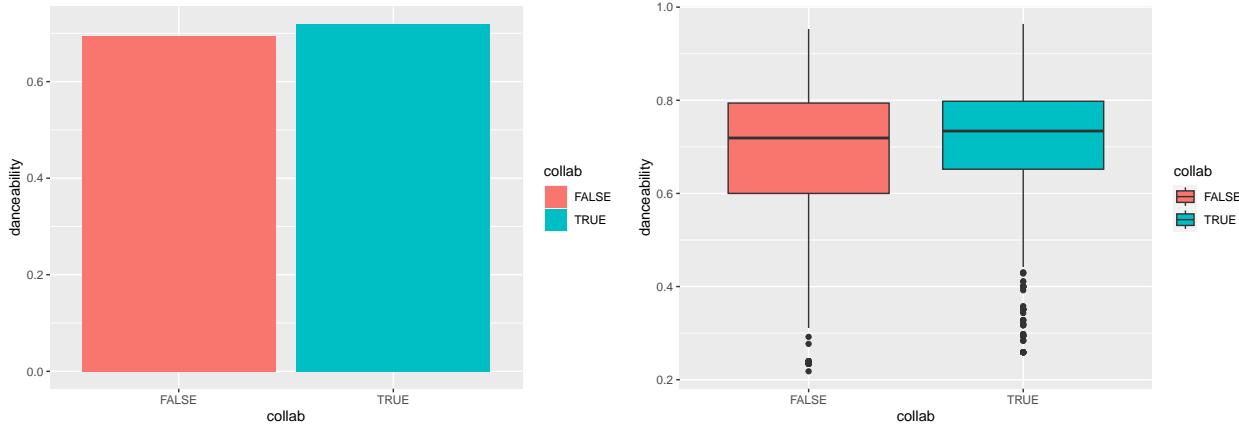
group: FALSE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	4438	0.26	0.26	0.17	0.22	0.22	0	0.99	0.99	1.05	0	0

group: TRUE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	4397	0.19	0.18	0.14	0.16	0.15	0	0.93	0.93	1.42	1.78	0

[1] "danceability and album\_type"



#### Descriptive statistics by group

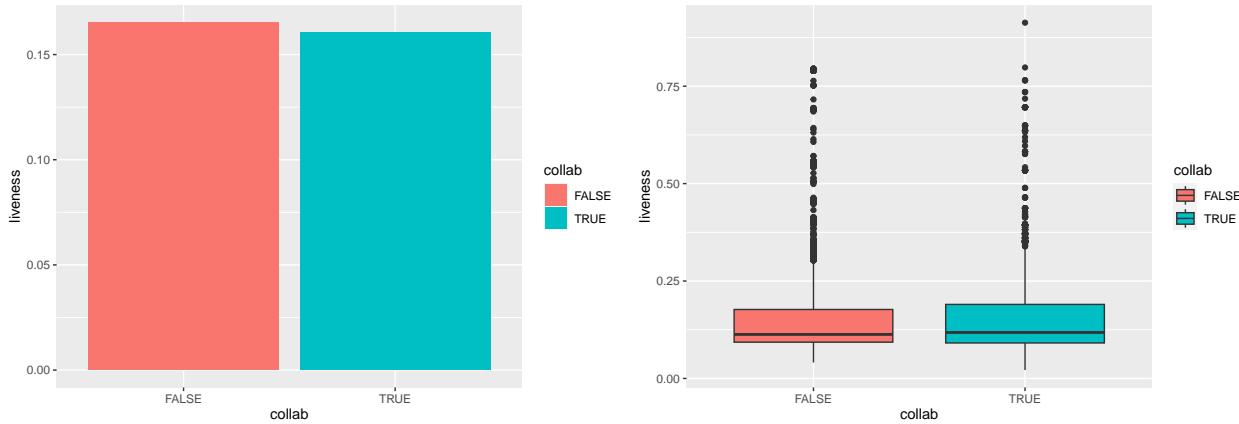
group: FALSE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	4438	0.69	0.14	0.72	0.7	0.15	0.22	0.95	0.74	-0.62	-0.08	0

group: TRUE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	4397	0.72	0.12	0.73	0.73	0.11	0.26	0.96	0.7	-0.74	1.33	0

[1] "liveness and album\_type"



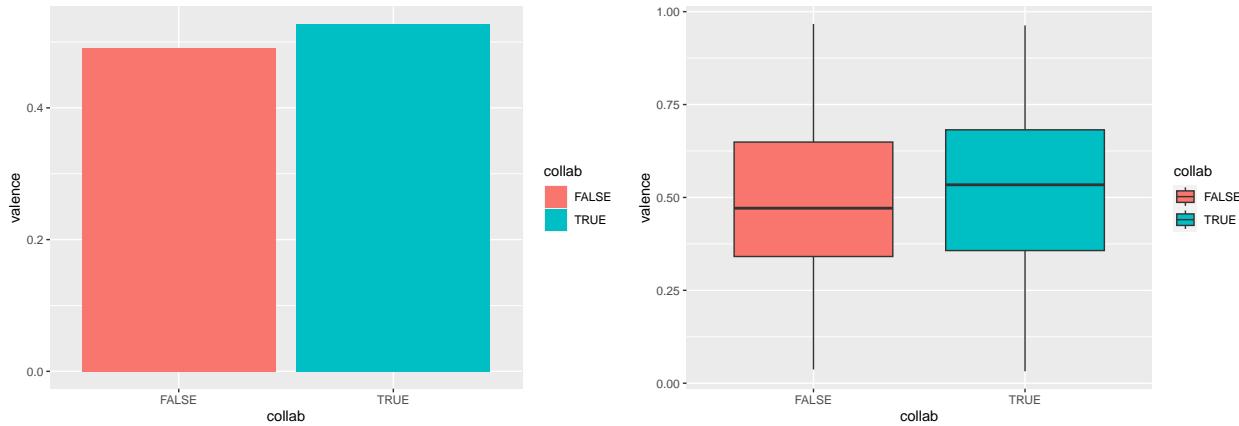
#### Descriptive statistics by group

group: FALSE

```
vars   n  mean   sd median trimmed  mad  min  max range skew kurtosis se
X1     1 4438 0.17 0.13    0.11    0.14 0.04 0.04 0.8  0.75 2.44    7.07 0
```

group: TRUE

```
vars   n  mean   sd median trimmed  mad  min  max range skew kurtosis se
X1     1 4397 0.16 0.11    0.12    0.14 0.05 0.02 0.91  0.89 2.26    6.63 0
[1] "valence and album_type"
```



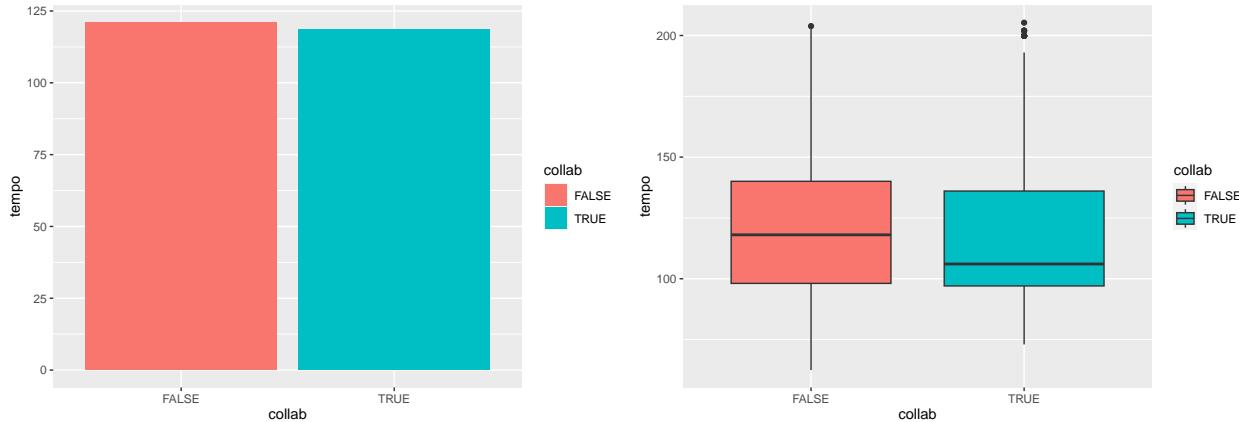
#### Descriptive statistics by group

group: FALSE

```
vars   n  mean   sd median trimmed  mad  min  max range skew kurtosis se
X1     1 4438 0.49 0.22    0.47    0.49 0.22 0.04 0.97  0.93 0.18   -0.67 0
```

group: TRUE

```
vars   n  mean   sd median trimmed  mad  min  max range skew kurtosis se
X1     1 4397 0.53 0.22    0.53    0.53 0.24 0.03 0.96  0.93 -0.08   -0.77 0
[1] "tempo and album_type"
```



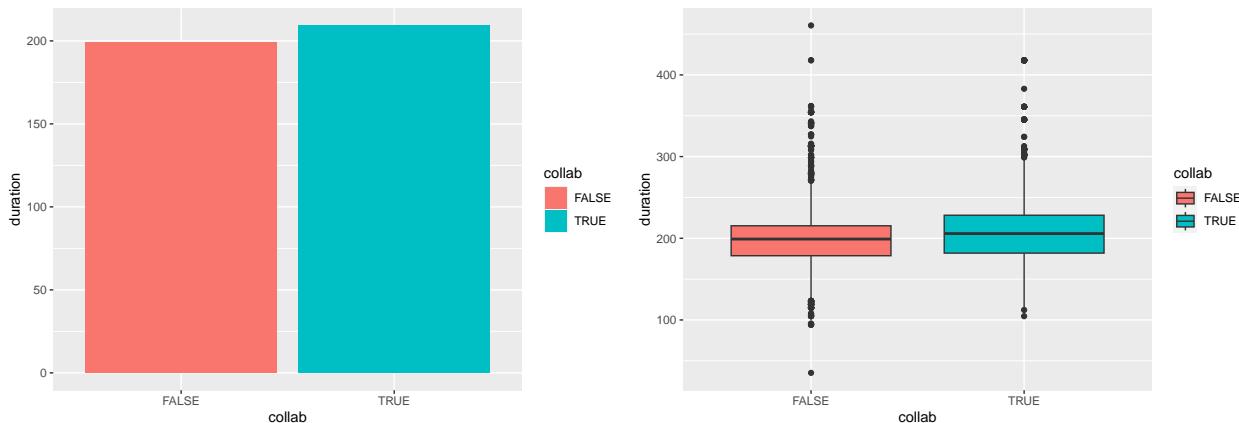
#### Descriptive statistics by group

group: FALSE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew
X1	1	4438	120.93	28.08	118.05	119.42	31.17	62.45	203.86	141.42	0.43
	kurtosis										
X1			-0.48	0.42							

group: TRUE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis
X1	1	4397	118.63	27.88	106.07	115.42	23.8	72.99	205.27	132.28	0.84	-0.17
	se											
X1			0.42									
[1]	"duration and album_type"											



#### Descriptive statistics by group

group: FALSE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis
X1	1	4438	199.26	37.74	199.05	197.74	27.5	35.24	460.57	425.33	0.85	3.25
	se											
X1			0.57									

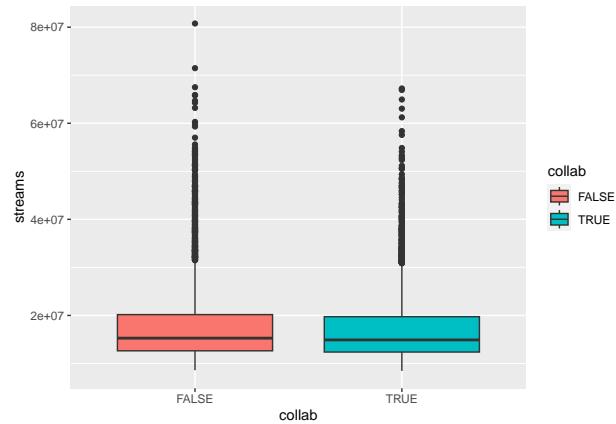
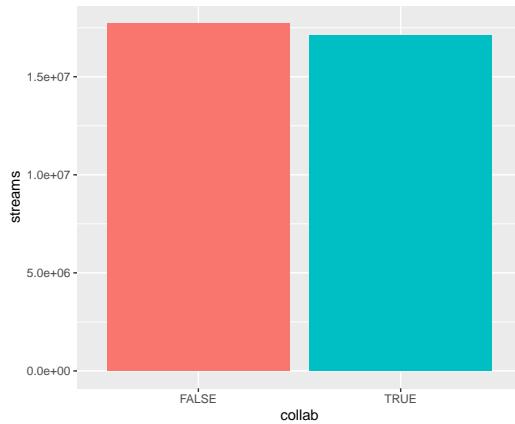
group: TRUE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew
X1	1	4397	209.32	39.02	205.75	206.42	33.71	104.59	417.92	313.33	1.42

```

kurtosis    se
X1      5.16 0.59
[1] "streams and album_type"

```



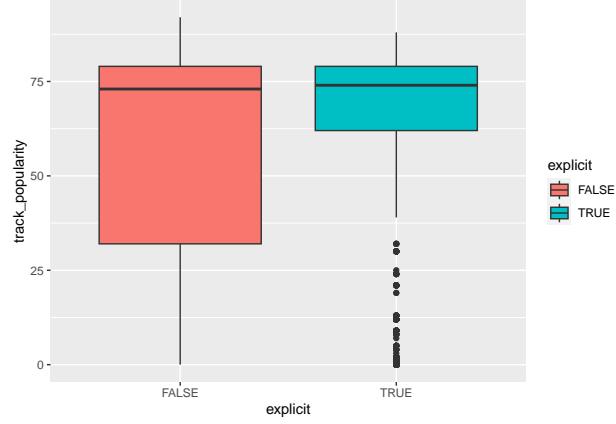
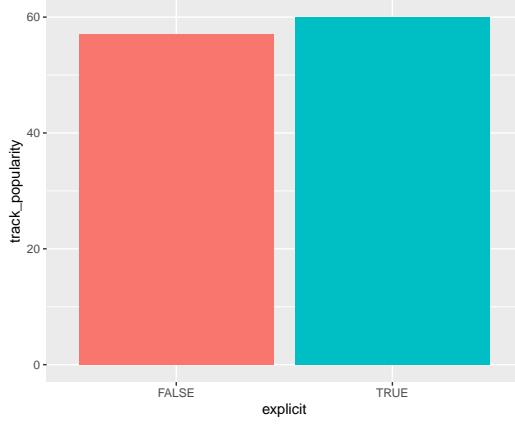
Descriptive statistics by group  
group: FALSE

	vars	n	mean	sd	median	trimmed	mad	min	max
X1	1	4438	17715995	7682487	15271612	16344151	4654099	8595924	80764045
		range	skew	kurtosis	se				
X1	72168121	2.33		7.65	115320.9				

group: TRUE

	vars	n	mean	sd	median	trimmed	mad	min	max
X1	1	4397	17089479	6807826	14905189	15931249	4641457	8454914	67237638
		range	skew	kurtosis	se				
X1	58782724	2.12		6.71	102666.9				

```
[1] "track_popularity and album_type"
```



Descriptive statistics by group  
group: FALSE

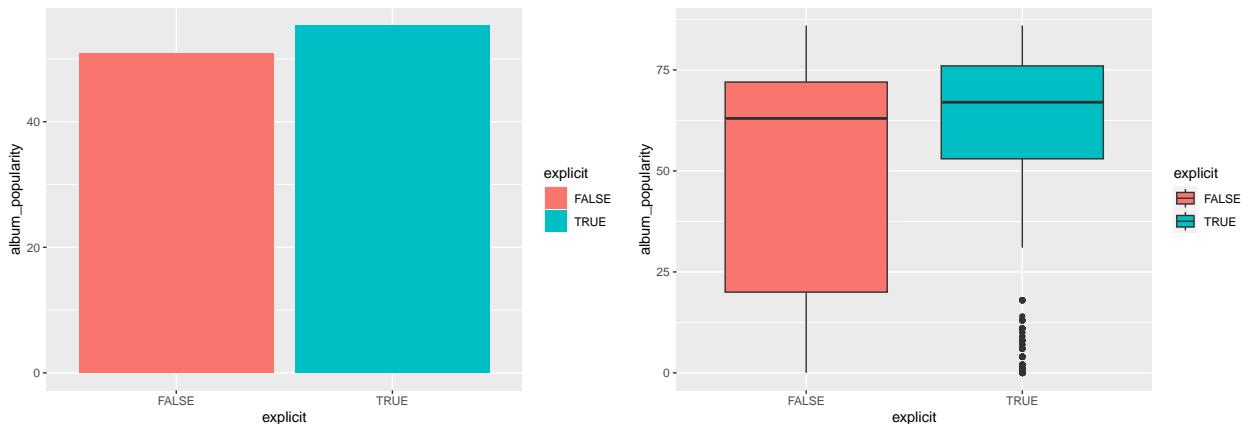
	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	5409	57.01	32.4	73	60.43	13.34	0	92	92	-1.01	-0.75	0.44

group: TRUE

```

vars      n   mean     sd median trimmed mad min max range skew kurtosis    se
X1       1 3426 59.97 30.46      74   64.53 8.9    0   88     88 -1.29     -0.12 0.52
[1] "album_popularity and album_type"

```



Descriptive statistics by group  
group: FALSE

```

vars      n   mean     sd median trimmed mad min max range skew kurtosis    se
X1       1 5409 50.82 30.29      63   53.03 16.31    0   86     86 -0.85     -0.89 0.41

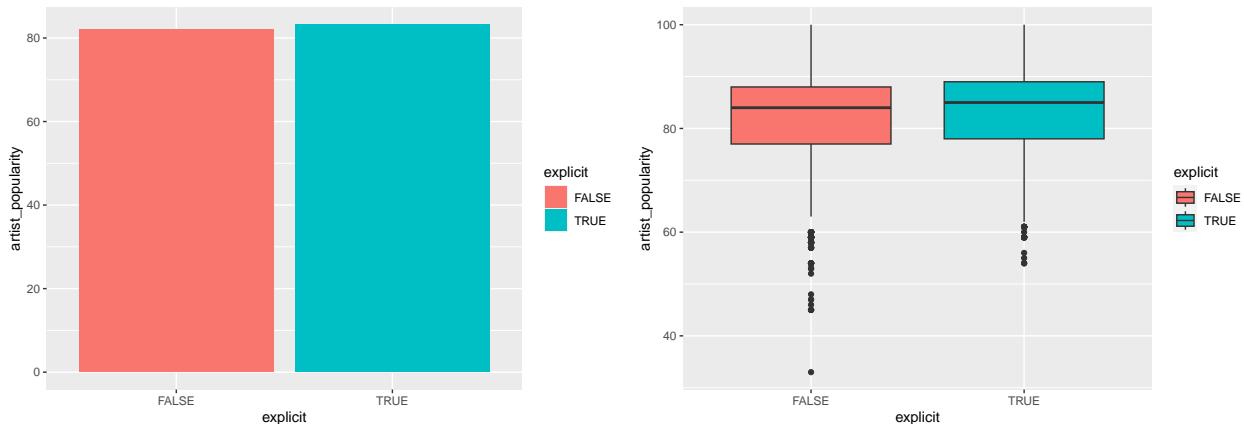
```

group: TRUE

```

vars      n   mean     sd median trimmed mad min max range skew kurtosis    se
X1       1 3426 55.32 29.47      67   58.75 16.31    0   86     86 -1.11     -0.37 0.5
[1] "artist_popularity and album_type"

```



Descriptive statistics by group  
group: FALSE

```

vars      n   mean     sd median trimmed mad min max range skew kurtosis    se
X1       1 5409 81.96 8.51      84   82.59 7.41   33 100     67 -0.73     0.94 0.12

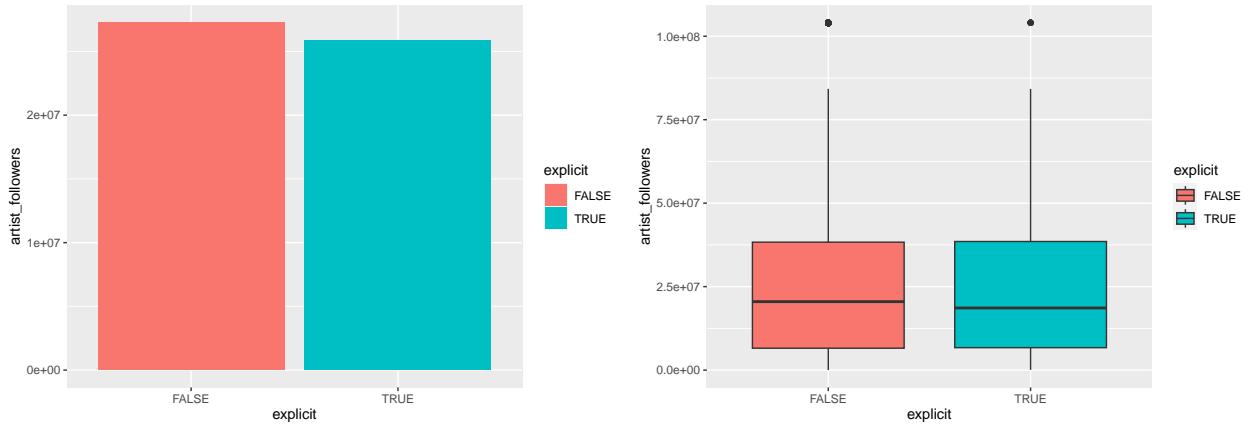
```

group: TRUE

```

vars      n   mean     sd median trimmed mad min max range skew kurtosis    se
X1       1 3426 83.17 8.57      85   83.68 5.93   54 100     46 -0.59     0.11 0.15
[1] "artist_followers and album_type"

```



#### Descriptive statistics by group

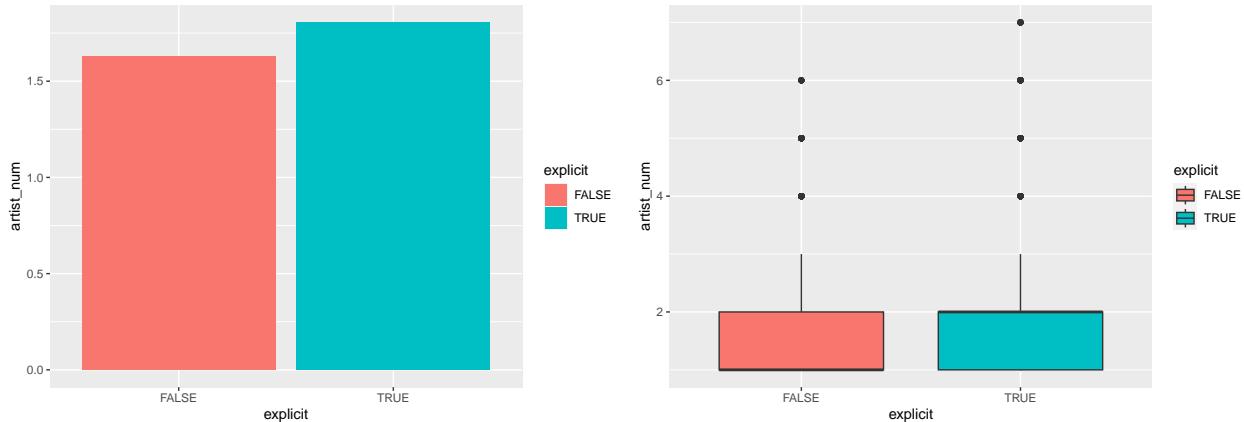
group: FALSE

	vars	n	mean	sd	median	trimmed	mad	min	max
X1	1	5409	27256267	26306822	20501433	23164117	23066865	3805	104059839
	range	skew	kurtosis	se					
X1	104056034	1.29	1.2	357692.6					

group: TRUE

	vars	n	mean	sd	median	trimmed	mad	min	max
X1	1	3426	25845279	24202546	18611334	22578968	20619058	54232	104059839
	range	skew	kurtosis	se					
X1	104005607	1.03	0.03	413492.2					

[1] "artist\_num and album\_type"



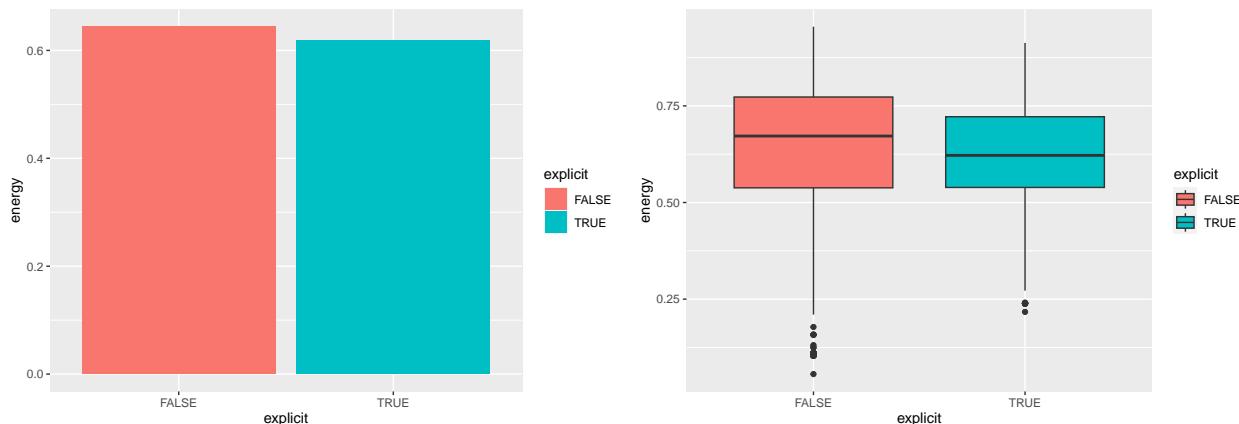
#### Descriptive statistics by group

group: FALSE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	5409	1.63	0.8	1	1.48	0	1	6	5	1.64	3.86	0.01

group: TRUE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	3426	1.81	1.04	2	1.61	1.48	1	7	6	1.82	4.23	0.02

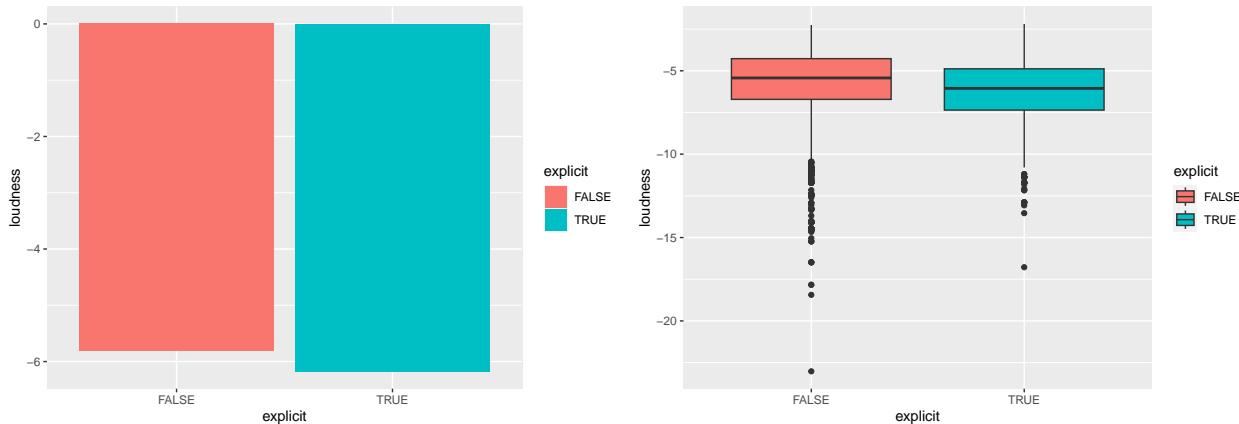


Descriptive statistics by group  
group: FALSE

```
vars   n  mean   sd median trimmed  mad  min  max range skew kurtosis se
X1    1 5409  0.64  0.16   0.67    0.66  0.17  0.06  0.96  0.9 -0.65 -0.03  0
```

group: TRUE

```
vars   n  mean   sd median trimmed  mad  min  max range skew kurtosis se
X1    1 3426  0.62  0.13   0.62    0.62  0.13  0.22  0.91  0.7 -0.25 -0.19  0
[1] "loudness and album_type"
```

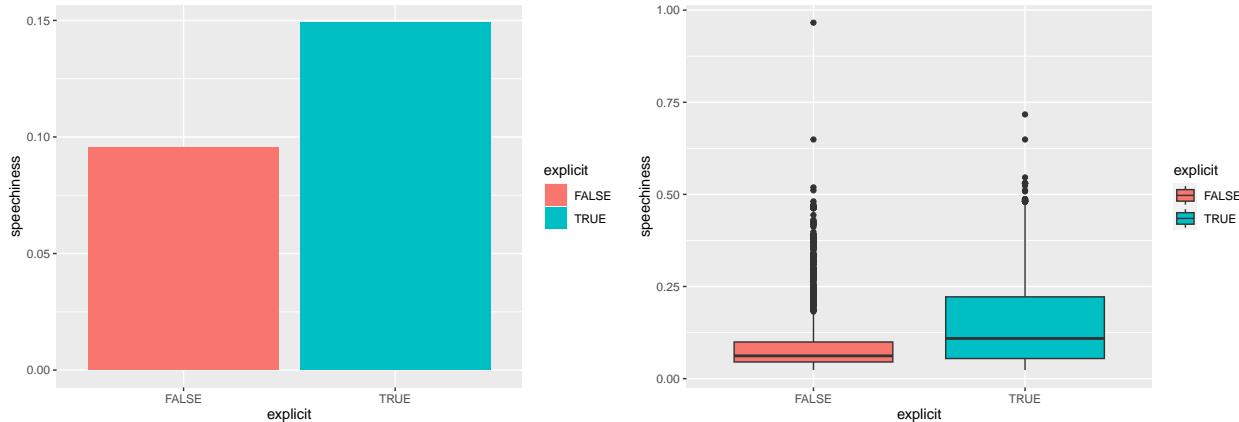


Descriptive statistics by group  
group: FALSE

```
vars   n  mean   sd median trimmed  mad  min  max range skew kurtosis se
X1    1 5409 -5.81  2.28  -5.43   -5.53  1.79 -23.02 -2.25 20.77 -1.51   3.44
      se
X1  0.03
```

group: TRUE

```
vars   n  mean   sd median trimmed  mad  min  max range skew kurtosis se
X1    1 3426 -6.17  1.87  -6.05   -6.08  1.81 -16.78 -2.19 14.59 -0.53   0.47
      se
X1  0.03
[1] "speechiness and album_type"
```



#### Descriptive statistics by group

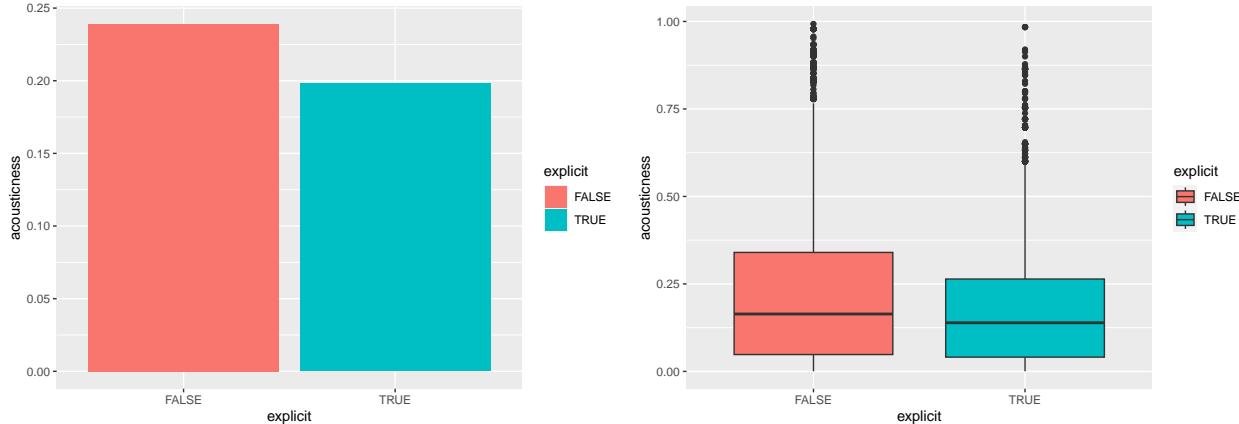
group: FALSE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	5409	0.1	0.09	0.06	0.08	0.03	0.02	0.97	0.94	2.4	6.57	0

group: TRUE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	3426	0.15	0.11	0.11	0.13	0.09	0.02	0.72	0.69	1.08	0.48	0

[1] "acousticness and album\_type"



#### Descriptive statistics by group

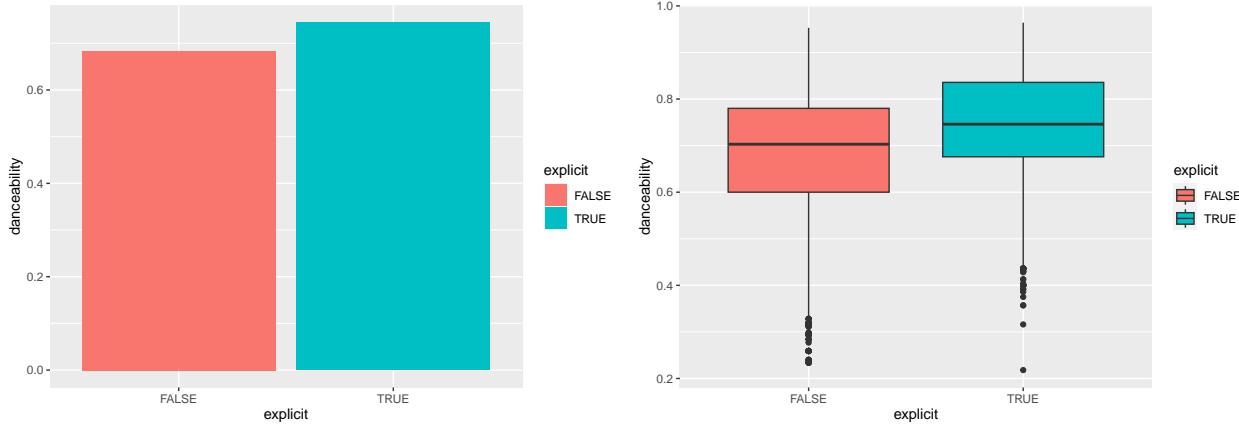
group: FALSE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	5409	0.24	0.24	0.16	0.2	0.19	0	0.99	0.99	1.22	0.55	0

group: TRUE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	3426	0.2	0.2	0.14	0.17	0.16	0	0.98	0.98	1.32	1.24	0

[1] "danceability and album\_type"



#### Descriptive statistics by group

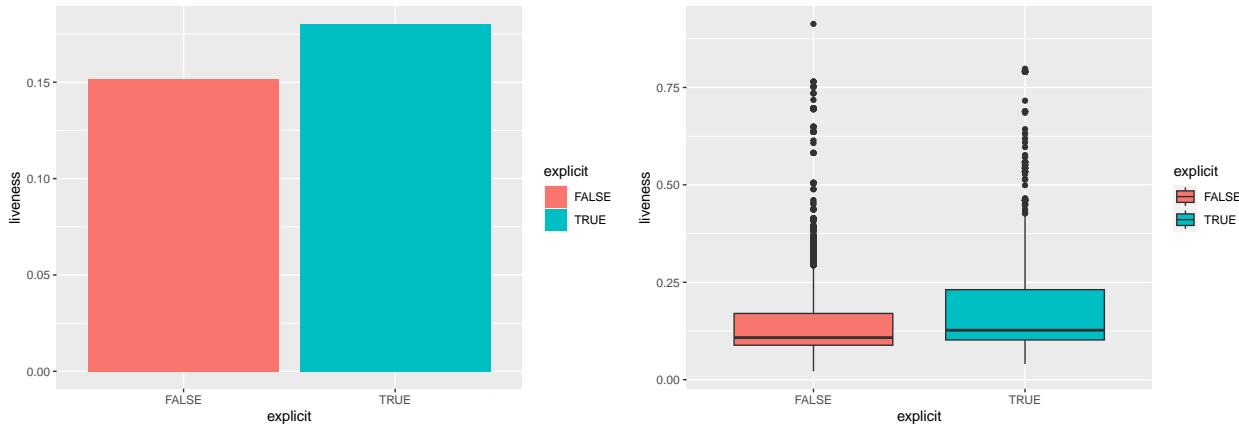
group: FALSE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	5409	0.68	0.13	0.7	0.69	0.12	0.23	0.95	0.72	-0.81	0.5	0

group: TRUE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	3426	0.74	0.12	0.75	0.75	0.13	0.22	0.96	0.75	-0.46	-0.14	0

[1] "liveness and album\_type"



#### Descriptive statistics by group

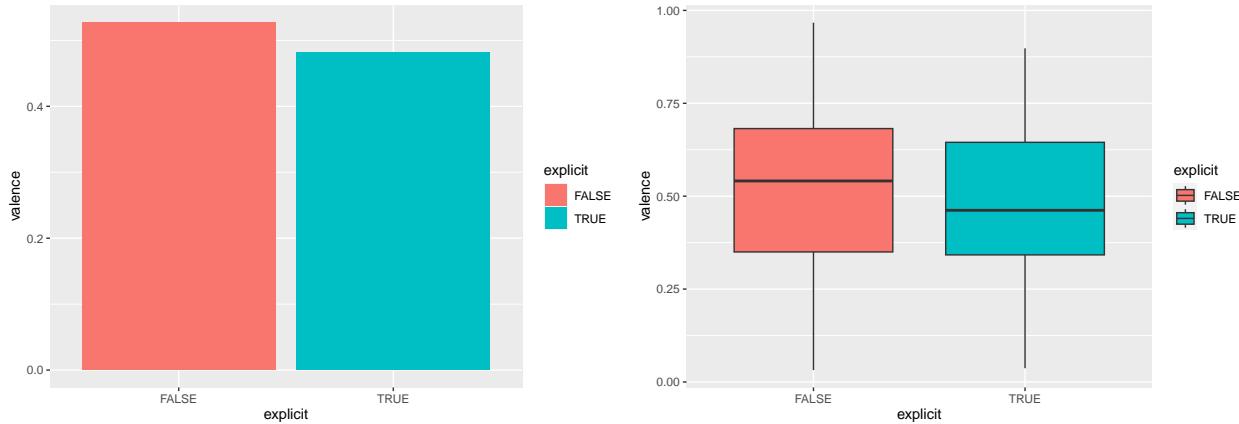
group: FALSE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se	
X1	1	5409	0.15	0.11	0.11	0.13	0.13	0.05	0.02	0.91	0.89	2.46	7.85	0

group: TRUE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	3426	0.18	0.13	0.13	0.16	0.05	0.04	0.8	0.76	2.23	5.85	0

[1] "valence and album\_type"



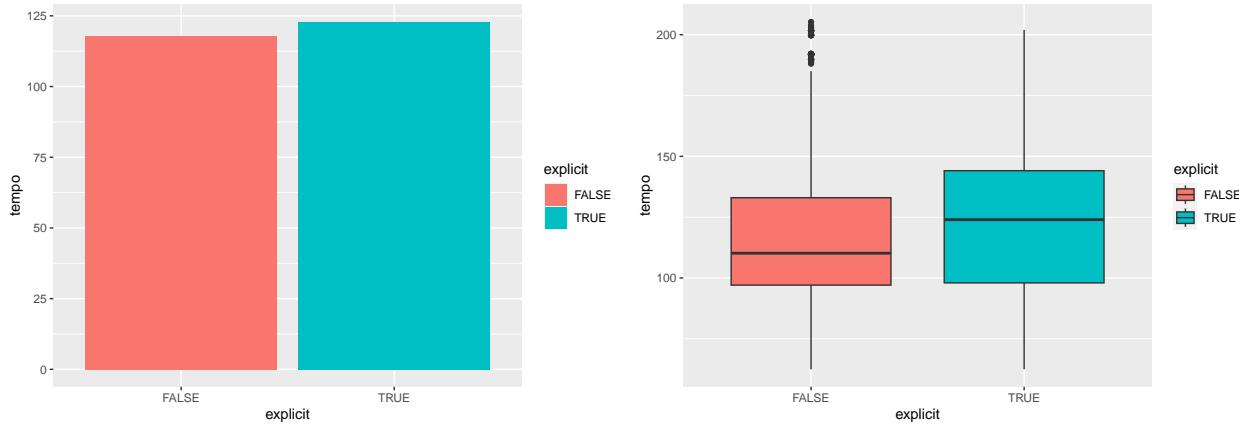
#### Descriptive statistics by group

group: FALSE

```
vars   n  mean   sd median trimmed  mad  min  max range skew kurtosis se
X1    1 5409 0.53 0.22   0.54    0.53 0.25 0.03 0.97 0.93   0   -0.78  0
```

group: TRUE

```
vars   n  mean   sd median trimmed  mad  min  max range skew kurtosis se
X1    1 3426 0.48 0.2   0.46    0.48 0.22 0.04 0.9  0.86 0.08   -0.74  0
[1] "tempo and album_type"
```



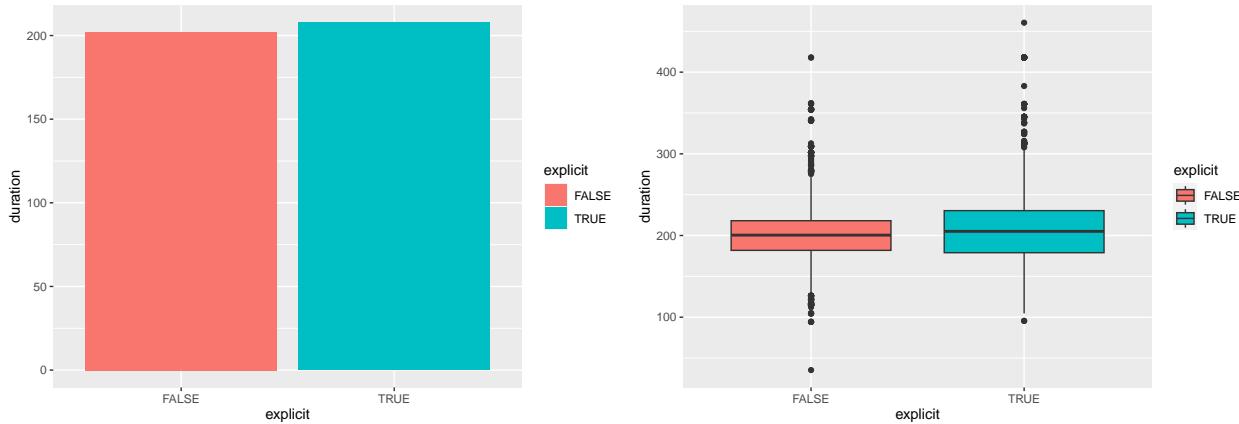
#### Descriptive statistics by group

group: FALSE

```
vars   n  mean   sd median trimmed  mad  min  max range skew
X1    1 5409 117.84 27.02 110.18  114.56 21.93 62.45 205.27 142.83 0.95
      kurtosis   se
X1    0.24 0.37
```

group: TRUE

```
vars   n  mean   sd median trimmed  mad  min  max range skew
X1    1 3426 122.85 29.24 123.98  121.88 35.67 62.48 202.01 139.52 0.2
      kurtosis   se
X1    -0.88 0.5
[1] "duration and album_type"
```



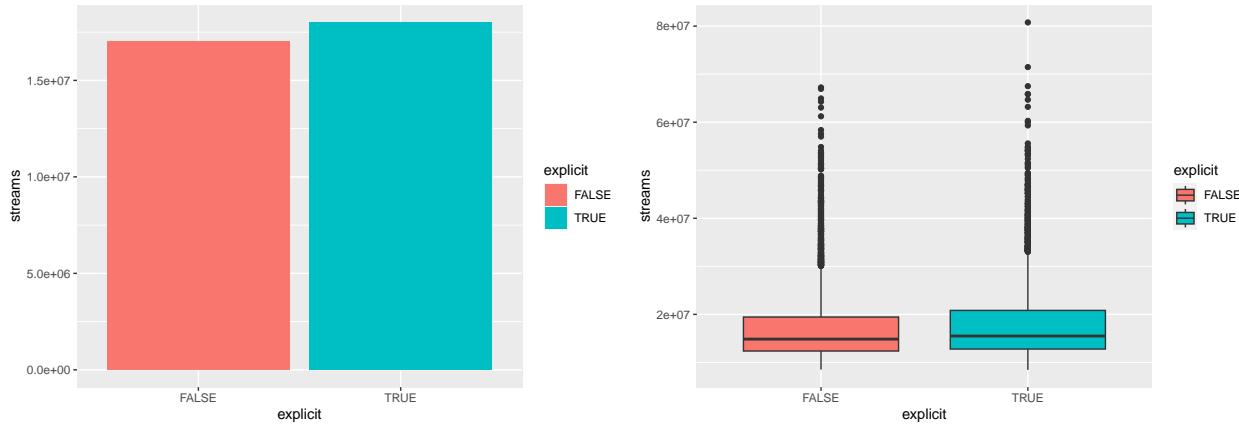
#### Descriptive statistics by group

group: FALSE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew
X1	1	5409	202.09	33.24	200.48	200.45	27.16	35.24	417.92	382.68	0.81
	kurtosis										
X1			3.23	0.45							

group: TRUE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew
X1	1	3426	207.69	45.83	205.09	204.74	38.08	95.47	460.57	365.11	1.16
	kurtosis										
X1			3.56	0.78							
[1] "streams and album_type"											



#### Descriptive statistics by group

group: FALSE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew
X1	1	5409	17024081	6887745	14850291	15834716	4442638	8509565	67237638		
	kurtosis										
X1		58728073	2.26	7.43	93652.32						

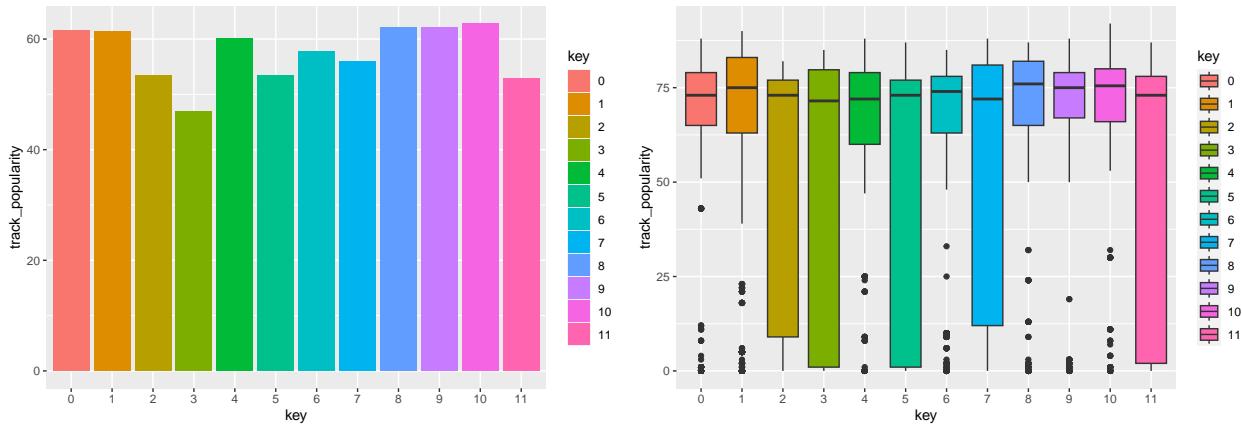
group: TRUE

	vars	n	mean	sd	median	trimmed	mad	min	max
X1	1	3426	18004312	7791146	15497205	16634435	4944605	8454914	80764045

```

range skew kurtosis      se
X1 72309131 2.22      7.18 133109.1
[1] "track_popularity and album_type"

```



#### Descriptive statistics by group

group: 0

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	961	61.49	29.49	73	65.94	8.9	0	88	88	-1.42	0.33	0.95

group: 1

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	1238	61.43	31.28	75	65.71	13.34	0	90	90	-1.21	-0.24	0.89

group: 2

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	689	53.46	32.43	73	56.62	10.38	0	82	82	-0.89	-1.03	1.24

group: 3

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	186	46.89	37.57	71.5	48.17	17.05	0	85	85	-0.39	-1.8	2.75

group: 4

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	455	60.05	28.28	72	64.51	13.34	0	88	88	-1.32	0.15	1.33

group: 5

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	768	53.45	33.53	73	56.25	13.34	0	87	87	-0.86	-1.1	1.21

group: 6

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	834	57.69	31.14	74	61.63	8.9	0	85	85	-1.15	-0.51	1.08

group: 7

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	753	55.88	33.73	72	59.17	14.83	0	88	88	-0.9	-1.02	1.23

group: 8

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
--	------	---	------	----	--------	---------	-----	-----	-----	-------	------	----------	----

```
X1      1 878 62.12 30.34      76   66.97 8.9    0  87     87 -1.39      0.17 1.02
```

group: 9

vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	560	62.13	29.37	75	67.07	8.9	0	88	88	-1.5	0.49

group: 10

vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	526	62.81	28.52	75.5	67.97	8.15	0	92	92	-1.49	0.49

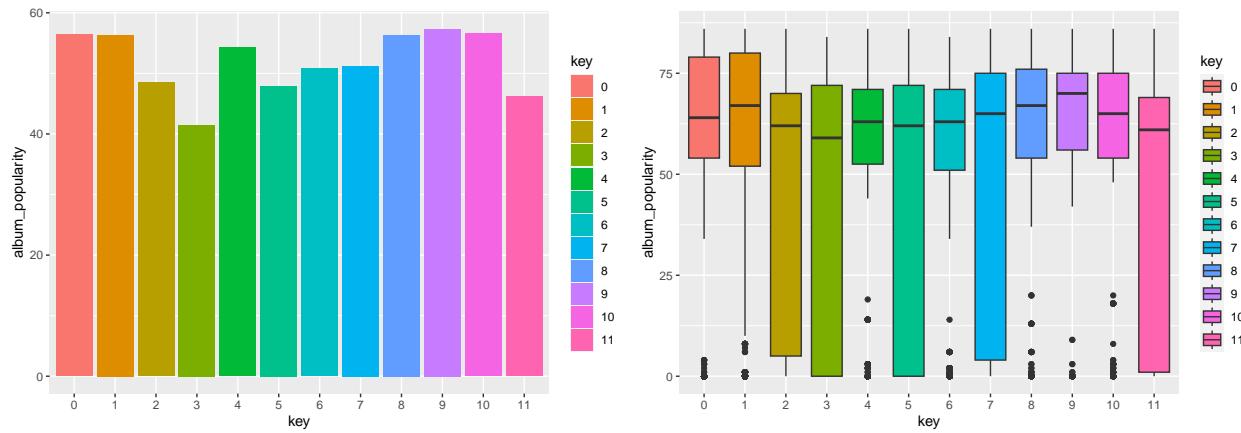
group: 11

vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	987	52.91	33.27	73	55.74	10.38	0	87	87	-0.8	-1.19

group: Unknown

NULL

[1] "album\_popularity and album\_type"



#### Descriptive statistics by group

group: 0

vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	961	56.45	28.59	64	59.96	16.31	0	86	86	-1.16	-0.07

group: 1

vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	1238	56.3	30.36	67	59.73	19.27	0	86	86	-1.06	-0.5

group: 2

vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	689	48.48	30.66	62	50.14	17.79	0	86	86	-0.74	-1.1

group: 3

vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	186	41.46	33.91	59	42.04	20.76	0	84	84	-0.35	-1.78

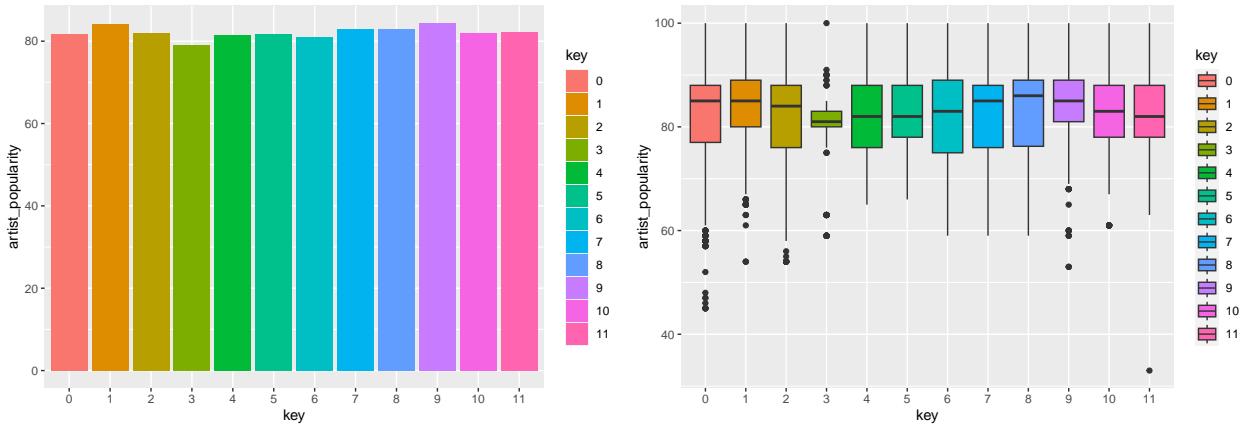
group: 4

vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	455	54.3	27.34	63	57.42	14.83	0	86	86	-1.1	-0.21

```

group: 5
  vars   n  mean    sd median trimmed   mad min max range skew kurtosis   se
X1     1 768 47.95 30.79      62   49.83 16.31    0  86    86 -0.77    -1.15 1.11
-----
group: 6
  vars   n  mean    sd median trimmed   mad min max range skew kurtosis   se
X1     1 834 50.78 28.74      63   53.36 14.83    0  84    84  -1    -0.66  1
-----
group: 7
  vars   n  mean    sd median trimmed   mad min max range skew kurtosis   se
X1     1 753 51.26 32.38      65   53.6 22.24    0  86    86 -0.77    -1.13 1.18
-----
group: 8
  vars   n  mean    sd median trimmed   mad min max range skew kurtosis   se
X1     1 878 56.31 28.92      67   59.84 17.79    0  86    86 -1.16    -0.18 0.98
-----
group: 9
  vars   n  mean    sd median trimmed   mad min max range skew kurtosis   se
X1     1 560 57.36 28.2       70   61.3 14.83    0  86    86 -1.34     0.21 1.19
-----
group: 10
  vars   n  mean    sd median trimmed   mad min max range skew kurtosis   se
X1     1 526 56.59 27.59      65   60.49 14.83    0  86    86 -1.27     0.06 1.2
-----
group: 11
  vars   n  mean    sd median trimmed   mad min max range skew kurtosis   se
X1     1 987 46.16 30.41      61   47.62 19.27    0  86    86 -0.64    -1.28 0.97
-----
group: Unknown
NULL
[1] "artist_popularity and album_type"

```



```

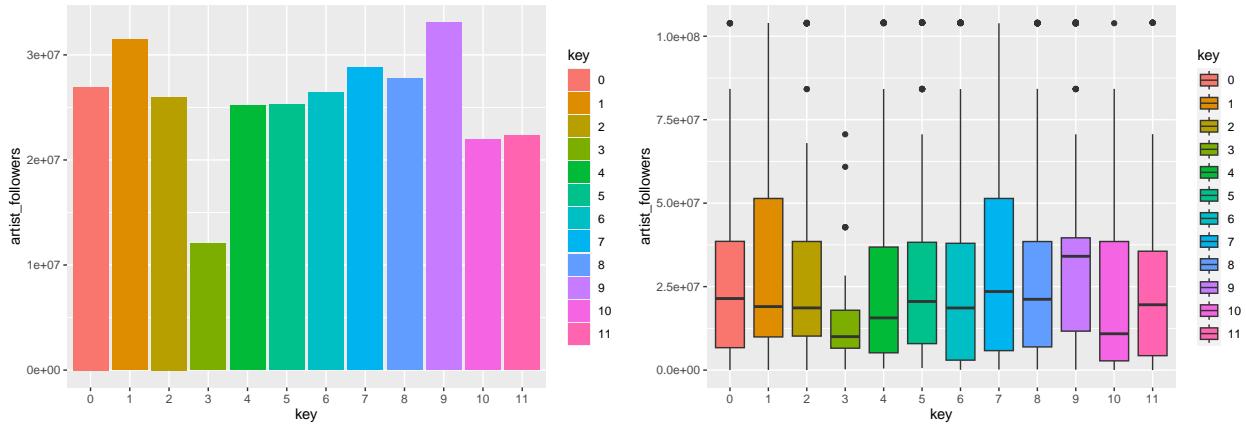
Descriptive statistics by group
group: 0
  vars   n  mean    sd median trimmed   mad min max range skew kurtosis   se
X1     1 961 81.85 9.98      85   82.95 7.41   45 100    55 -1.06    1.17 0.32
-----
group: 1
  vars   n  mean    sd median trimmed   mad min max range skew kurtosis   se

```

```

X1      1 1238 84.17 7.67      85     84.56 7.41  54 100      46 -0.46      0.07 0.22
-----
group: 2
  vars   n  mean    sd median trimmed mad min max range skew kurtosis   se
X1      1 689 82.04 10.26      84     82.6 7.41  54 100      46 -0.59      0.24 0.39
-----
group: 3
  vars   n  mean    sd median trimmed mad min max range skew kurtosis   se
X1      1 186 79.09 8.11      81     80.15 2.97  59 100      41 -1.31      1.16 0.59
-----
group: 4
  vars   n  mean    sd median trimmed mad min max range skew kurtosis   se
X1      1 455 81.55 8.03      82     81.6 8.9   65 100      35 0.03     -0.06 0.38
-----
group: 5
  vars   n  mean  sd median trimmed mad min max range skew kurtosis   se
X1      1 768 81.79 7       82     82.44 7.41  66 100      34 -0.62     -0.18 0.25
-----
group: 6
  vars   n  mean  sd median trimmed mad min max range skew kurtosis   se
X1      1 834 81.03 9.4      83     81.59 8.9   59 100      41 -0.47     -0.67 0.33
-----
group: 7
  vars   n  mean    sd median trimmed mad min max range skew kurtosis   se
X1      1 753 82.88 9.08      85     83.22 8.9   59 100      41 -0.33     -0.36 0.33
-----
group: 8
  vars   n  mean    sd median trimmed mad min max range skew kurtosis   se
X1      1 878 82.84 8.08      86     83.55 5.93  59 100      41 -0.8      0.01 0.27
-----
group: 9
  vars   n  mean    sd median trimmed mad min max range skew kurtosis   se
X1      1 560 84.38 7.49      85     84.92 5.93  53 100      47 -0.96     2.27 0.32
-----
group: 10
  vars   n  mean    sd median trimmed mad min max range skew kurtosis   se
X1      1 526 81.99 8.37      83     82.52 7.41  61 100      39 -0.61     0.06 0.36
-----
group: 11
  vars   n  mean    sd median trimmed mad min max range skew kurtosis   se
X1      1 987 82.21 7.41      82     82.5 7.41   33 100      67 -0.53     2.03 0.24
-----
group: Unknown
NULL
[1] "artist_followers and album_type"

```



#### Descriptive statistics by group

group: 0

	vars	n	mean	sd	median	trimmed	mad	min	max
X1	1	961	26937524	25042542	21433236	23469965	25027221	14787	103886909
			range	skew	kurtosis	se			
X1			103872122	0.98		0.08	807823.9		

group: 1

	vars	n	mean	sd	median	trimmed	mad	min	max
X1	1	1238	31437864	29982089	19022127	27193339	19602994	54232	103972710
			range	skew	kurtosis	se			
X1			103918478	1.05		-0.11	852121.6		

group: 2

	vars	n	mean	sd	median	trimmed	mad	min	max
X1	1	689	25993688	22337943	18625123	23572921	20451678	25288	104059839
			range	skew	kurtosis	se			
X1			104034551	1.14		1.39	851007.8		

group: 3

	vars	n	mean	sd	median	trimmed	mad	min	max
X1	1	186	12046787	9993020	10021342	11038713	11701969	210804	70620453
			range	skew	kurtosis	se			
X1			70409649	2.24		8.79	732723.8		

group: 4

	vars	n	mean	sd	median	trimmed	mad	min	max
X1	1	455	25142762	24513631	15633727	21562643	21195456	460823	104059839
			range	skew	kurtosis	se			
X1			103599016	1.14		0.76	1149217		

group: 5

	vars	n	mean	sd	median	trimmed	mad	min	max
X1	1	768	25248880	22914504	20550098	21689985	20588298	616230	104059839
			range	skew	kurtosis	se			
X1			103443609	1.79		3.68	826855.9		

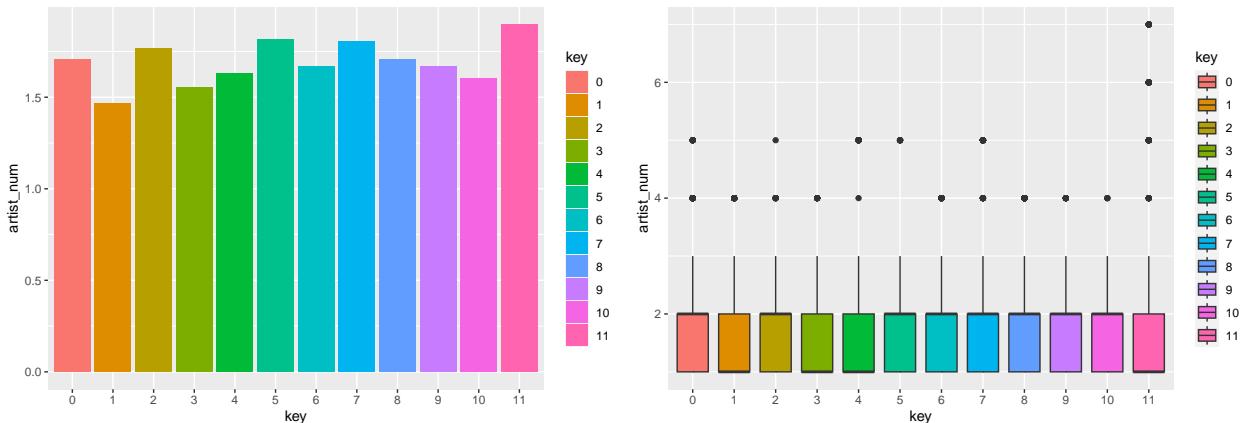
group: 6

	vars	n	mean	sd	median	trimmed	mad	min	max
--	------	---	------	----	--------	---------	-----	-----	-----

```

X1      1 834 26389239 27028168 18611334 22163155 23173176 77771 104059839
       range skew kurtosis      se
X1 103982068 1.23      0.96 935908.9
-----
group: 7
  vars   n    mean      sd   median   trimmed      mad      min      max
X1      1 753 28830884 26589780 23533520 26408160 26693777 155010 103886909
       range skew kurtosis      se
X1 103731899 0.71     -0.76 968985.4
-----
group: 8
  vars   n    mean      sd   median   trimmed      mad      min      max
X1      1 878 27732809 28302428 21210908 23096211 24636354 188111 104059839
       range skew kurtosis      se
X1 103871728 1.29      0.83 955160.7
-----
group: 9
  vars   n    mean      sd   median   trimmed      mad      min      max
X1      1 560 33066467 25672575 34086989 30306879 25874413 118316 104059839
       range skew kurtosis      se
X1 103941523 0.98      0.63 1084864
-----
group: 10
  vars   n    mean      sd   median   trimmed      mad      min      max
X1      1 526 21932598 23320036 10882121 18555965 15070017 42127 103886909
       range skew kurtosis      se
X1 103844782 1.04      0 1016802
-----
group: 11
  vars   n    mean      sd   median   trimmed      mad      min      max
X1      1 987 22355757 19540343 19568883 19546530 23531679 3805 104059839
       range skew kurtosis      se
X1 104056034 1.1      1.08 621976
-----
group: Unknown
NULL
[1] "artist_num and album_type"

```

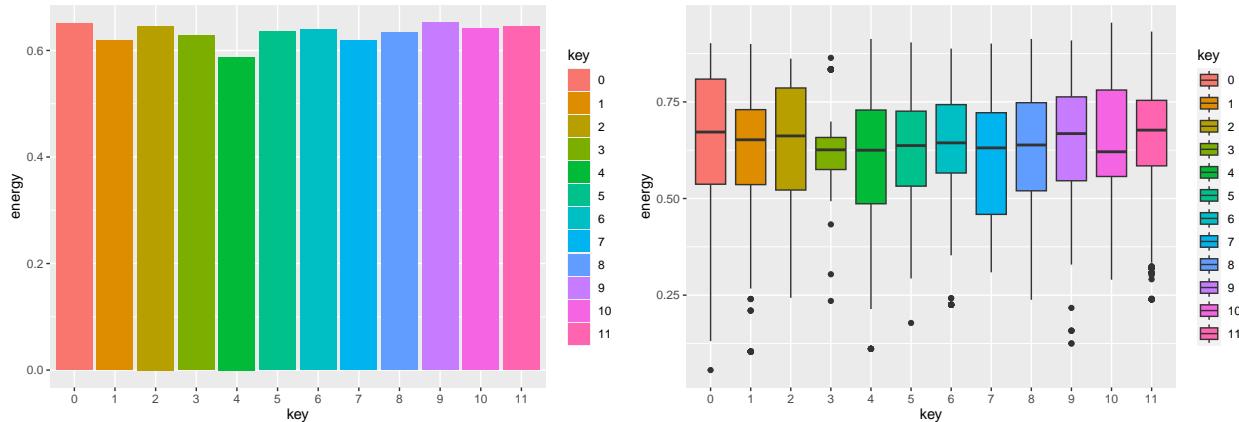


Descriptive statistics by group

```

group: 0
  vars   n mean   sd median trimmed mad min max range skew kurtosis   se
X1     1 961 1.71 0.88      2    1.55 1.48   1   5     4 1.45      2.17 0.03
-----
group: 1
  vars   n mean   sd median trimmed mad min max range skew kurtosis   se
X1     1 1238 1.47 0.82      1    1.28 0   1   4     3 1.71      2.01 0.02
-----
group: 2
  vars   n mean   sd median trimmed mad min max range skew kurtosis   se
X1     1 689 1.77 0.7      2    1.69 0   1   5     4 0.74      0.83 0.03
-----
group: 3
  vars   n mean   sd median trimmed mad min max range skew kurtosis   se
X1     1 186 1.55 0.92      1    1.34 0   1   4     3 1.64      1.58 0.07
-----
group: 4
  vars   n mean   sd median trimmed mad min max range skew kurtosis   se
X1     1 455 1.63 0.91      1    1.44 0   1   5     4 1.99      4.53 0.04
-----
group: 5
  vars   n mean   sd median trimmed mad min max range skew kurtosis   se
X1     1 768 1.81 0.8      2    1.73 1.48   1   5     4 1.08      2.11 0.03
-----
group: 6
  vars   n mean   sd median trimmed mad min max range skew kurtosis   se
X1     1 834 1.67 0.76      2    1.55 1.48   1   4     3 0.97      0.45 0.03
-----
group: 7
  vars   n mean   sd median trimmed mad min max range skew kurtosis   se
X1     1 753 1.81 1.06      2    1.59 1.48   1   5     4 1.66      2.42 0.04
-----
group: 8
  vars   n mean   sd median trimmed mad min max range skew kurtosis   se
X1     1 878 1.71 0.77      2    1.58 1.48   1   4     3 1.23      1.64 0.03
-----
group: 9
  vars   n mean   sd median trimmed mad min max range skew kurtosis   se
X1     1 560 1.67 0.75      2    1.55 1.48   1   4     3 1.04      0.89 0.03
-----
group: 10
  vars   n mean   sd median trimmed mad min max range skew kurtosis   se
X1     1 526 1.6 0.68      2    1.5 1.48   1   4     3 0.82      0.11 0.03
-----
group: 11
  vars   n mean   sd median trimmed mad min max range skew kurtosis   se
X1     1 987 1.9 1.34      1    1.58 0   1   7     6 2.08      4.06 0.04
-----
group: Unknown
NULL
[1] "energy and album_type"

```



#### Descriptive statistics by group

group: 0

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	961	0.65	0.16	0.67	0.66	0.2	0.06	0.9	0.85	-0.31	-0.93	0.01

group: 1

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	1238	0.62	0.15	0.65	0.63	0.14	0.1	0.9	0.8	-0.77	0.43	0

group: 2

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	689	0.65	0.14	0.66	0.65	0.2	0.24	0.86	0.62	-0.33	-0.94	0.01

group: 3

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	186	0.63	0.1	0.63	0.62	0.08	0.23	0.86	0.63	0.24	1.88	0.01

group: 4

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	455	0.59	0.19	0.62	0.61	0.19	0.11	0.91	0.8	-0.74	-0.28	0.01

group: 5

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	768	0.64	0.13	0.64	0.64	0.14	0.18	0.9	0.73	-0.18	-0.3	0

group: 6

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	834	0.64	0.13	0.64	0.65	0.12	0.22	0.89	0.66	-0.88	1.31	0

group: 7

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	753	0.62	0.15	0.63	0.62	0.17	0.31	0.9	0.59	-0.03	-0.96	0.01

group: 8

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	878	0.63	0.16	0.64	0.64	0.18	0.24	0.91	0.68	-0.22	-0.89	0.01

group: 9

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
--	------	---	------	----	--------	---------	-----	-----	-----	-------	------	----------	----

```
X1      1 560 0.65 0.15   0.67     0.66 0.18 0.12 0.91  0.78 -0.3    -0.1 0.01
```

```
group: 10
```

```
vars n mean sd median trimmed mad min max range skew kurtosis se
X1 1 526 0.64 0.14   0.62     0.65 0.18 0.29 0.96  0.66 -0.11    -0.69 0.01
```

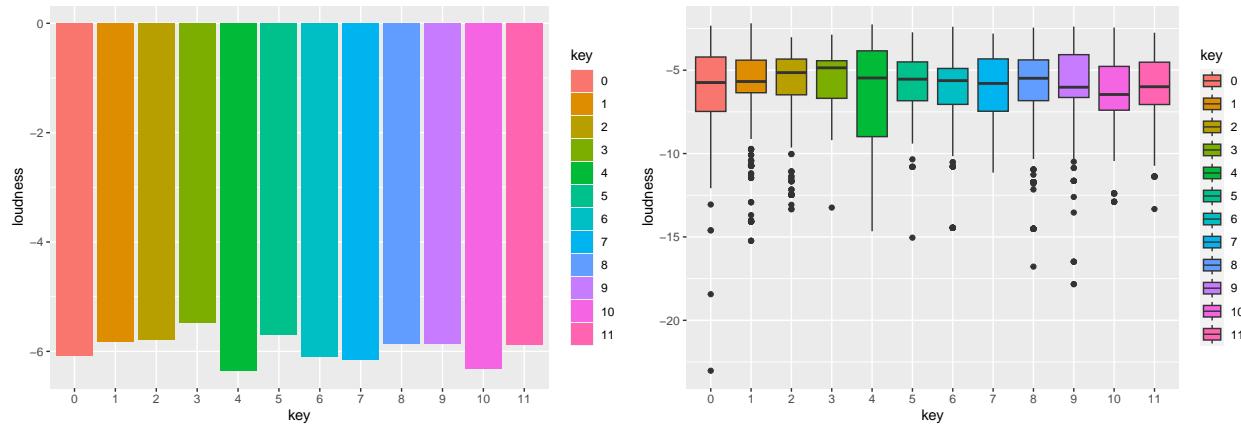
```
group: 11
```

```
vars n mean sd median trimmed mad min max range skew kurtosis se
X1 1 987 0.64 0.15   0.68     0.66 0.12 0.24 0.93  0.69 -0.97    0.36  0
```

```
group: Unknown
```

```
NULL
```

```
[1] "loudness and album_type"
```



```
Descriptive statistics by group
```

```
group: 0
```

```
vars n mean sd median trimmed mad min max range skew kurtosis
X1 1 961 -6.08 2.19  -5.74   -5.93 2.37 -23.02 -2.33 20.69 -1.08    3.98
se
X1 0.07
```

```
group: 1
```

```
vars n mean sd median trimmed mad min max range skew kurtosis
X1 1 1238 -5.82 2.12  -5.68   -5.54 1.42 -15.23 -2.19 13.04 -1.62    3.72
se
X1 0.06
```

```
group: 2
```

```
vars n mean sd median trimmed mad min max range skew kurtosis
X1 1 689 -5.79 2.16  -5.14   -5.49 1.42 -13.34 -3.02 10.31 -1.46    2.01
se
X1 0.08
```

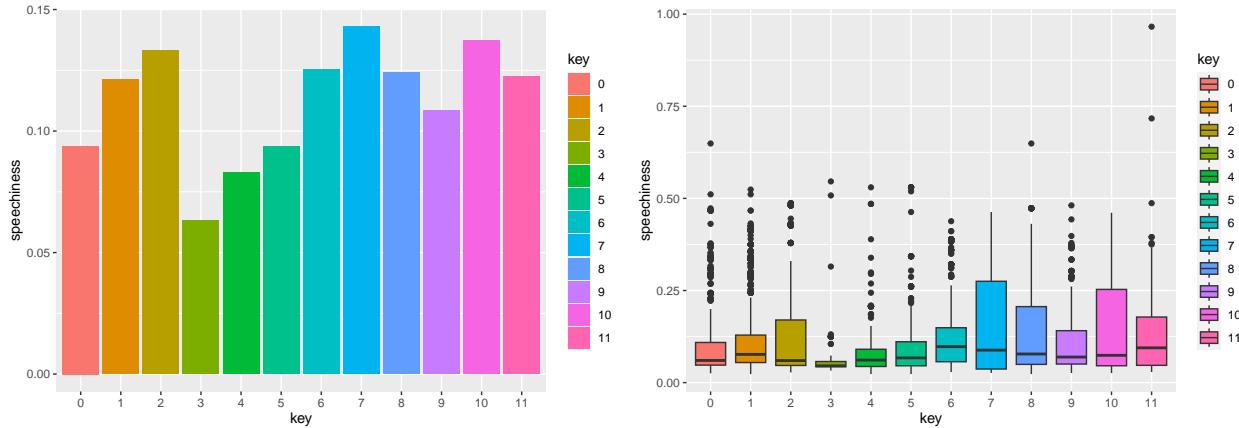
```
group: 3
```

```
vars n mean sd median trimmed mad min max range skew kurtosis
X1 1 186 -5.48 1.64  -4.86   -5.42 1.4 -13.24 -2.87 10.37 -0.82    1.46
se
X1 0.12
```

```

group: 4
  vars   n  mean    sd median trimmed   mad    min   max range skew kurtosis
X1     1 455 -6.35  2.91  -5.47   -6.06 3.01 -14.66 -2.25 12.41 -0.78   -0.15
      se
X1 0.14
-----
group: 5
  vars   n  mean    sd median trimmed   mad    min   max range skew kurtosis   se
X1     1 768 -5.7  1.75  -5.54   -5.67 1.88 -15.04 -2.73 12.32 -0.4    0.43  0.06
-----
group: 6
  vars   n  mean    sd median trimmed   mad    min   max range skew kurtosis   se
X1     1 834 -6.1  2.1   -5.63   -5.87 1.8  -14.45 -2.4 12.06 -1.73    4.89  0.07
-----
group: 7
  vars   n  mean    sd median trimmed   mad    min   max range skew kurtosis
X1     1 753 -6.15 2.27  -5.8   -5.94 2.27 -11.14 -2.81 8.34 -0.68   -0.47
      se
X1 0.08
-----
group: 8
  vars   n  mean    sd median trimmed   mad    min   max range skew kurtosis
X1     1 878 -5.86 2.28  -5.48   -5.62 1.89 -16.78 -2.44 14.34 -1.5    3.48
      se
X1 0.08
-----
group: 9
  vars   n  mean    sd median trimmed   mad    min   max range skew kurtosis   se
X1     1 560 -5.85 2.36  -6.02   -5.63 1.91 -17.83 -2.38 15.45 -1.4    4.22  0.1
-----
group: 10
  vars   n  mean    sd median trimmed   mad    min   max range skew kurtosis
X1     1 526 -6.32 1.89  -6.46   -6.23 2.33 -12.89 -2.44 10.45 -0.72   0.99
      se
X1 0.08
-----
group: 11
  vars   n  mean    sd median trimmed   mad    min   max range skew kurtosis
X1     1 987 -5.89 1.69  -5.99   -5.84 1.99 -13.33 -2.75 10.58 -0.48   0.37
      se
X1 0.05
-----
group: Unknown
NULL
[1] "speechiness and album_type"

```



#### Descriptive statistics by group

group: 0

vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se	
X1	1	961	0.09	0.08	0.06	0.07	0.03	0.03	0.65	0.62	2.59	7.47	0

group: 1

vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se	
X1	1	1238	0.12	0.11	0.08	0.1	0.04	0.02	0.52	0.5	1.55	1.18	0

group: 2

vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se	
X1	1	689	0.13	0.13	0.06	0.11	0.04	0.03	0.49	0.46	1.33	0.54	0

group: 3

vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se	
X1	1	186	0.06	0.06	0.05	0.05	0.01	0.03	0.55	0.51	6.26	45.6	0

group: 4

vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se	
X1	1	455	0.08	0.06	0.06	0.07	0.04	0.02	0.53	0.51	3.28	15.52	0

group: 5

vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se	
X1	1	768	0.09	0.08	0.07	0.08	0.04	0.02	0.53	0.51	2.92	11.25	0

group: 6

vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se	
X1	1	834	0.13	0.1	0.1	0.11	0.06	0.03	0.44	0.41	1.5	1.36	0

group: 7

vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se	
X1	1	753	0.14	0.13	0.09	0.12	0.08	0.03	0.46	0.44	1.02	-0.34	0

group: 8

vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se	
X1	1	878	0.12	0.1	0.08	0.11	0.06	0.02	0.65	0.63	1.42	1.87	0

group: 9

vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
------	---	------	----	--------	---------	-----	-----	-----	-------	------	----------	----

```
X1      1 560 0.11 0.09   0.07   0.09 0.04 0.03 0.48  0.46 1.67   2.04 0
```

group: 10

vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	526	0.14	0.12	0.07	0.12	0.05	0.03	0.46	0.44	1.04	-0.34

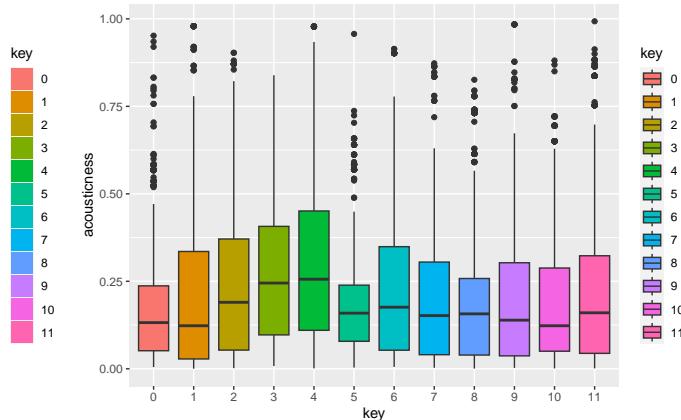
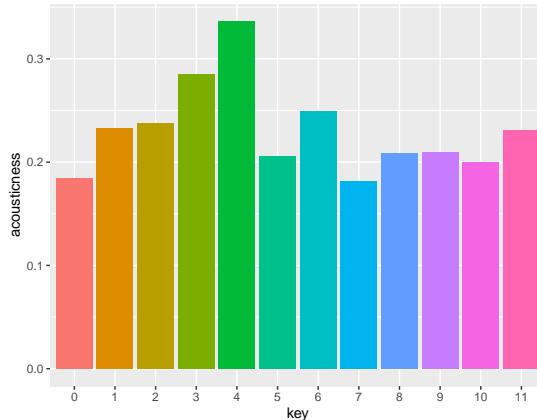
group: 11

vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	987	0.12	0.09	0.09	0.11	0.08	0.03	0.97	0.94	1.86	9.41

group: Unknown

NULL

[1] "acousticness and album\_type"



Descriptive statistics by group

group: 0

vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	961	0.18	0.18	0.13	0.16	0.14	0	0.95	0.95	1.39	1.6

group: 1

vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	1238	0.23	0.26	0.12	0.19	0.16	0	0.98	0.98	1.13	0.05

group: 2

vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	689	0.24	0.21	0.19	0.21	0.23	0	0.9	0.9	0.86	-0.08

group: 3

vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	186	0.28	0.22	0.24	0.28	0.22	0.01	0.84	0.83	0.47	-1.17

group: 4

vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	455	0.34	0.28	0.26	0.3	0.22	0	0.98	0.98	0.93	-0.24

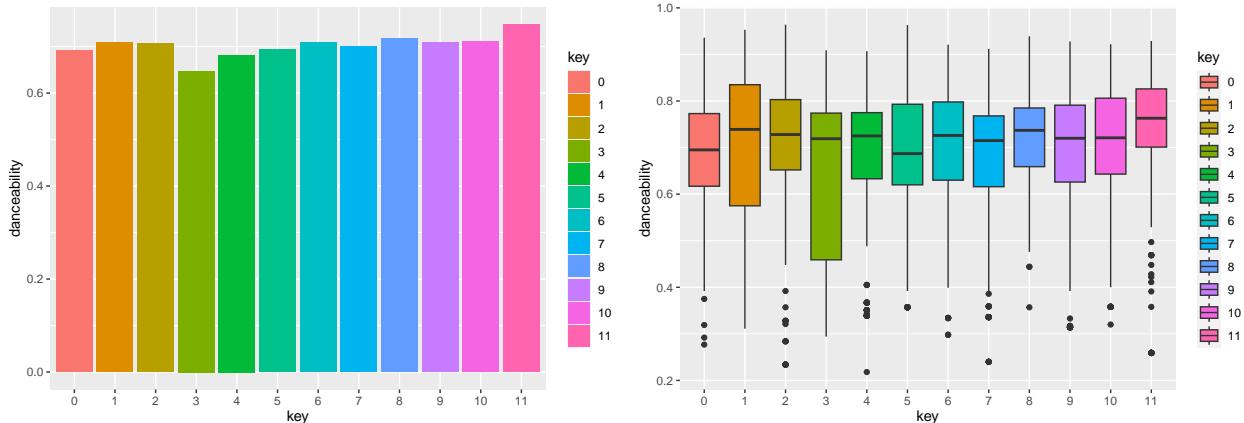
group: 5

vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	768	0.21	0.17	0.16	0.18	0.12	0	0.96	0.95	1.35	1.19

```

group: 6
  vars   n mean   sd median trimmed mad min max range skew kurtosis   se
X1     1 834 0.25 0.24    0.18    0.21 0.2 0.01 0.91  0.91 1.09      0.13 0.01
-----
group: 7
  vars   n mean   sd median trimmed mad min max range skew kurtosis   se
X1     1 753 0.18 0.17    0.15    0.16 0.17  0 0.87  0.87 1.69      3.54 0.01
-----
group: 8
  vars   n mean   sd median trimmed mad min max range skew kurtosis   se
X1     1 878 0.21 0.21    0.16    0.17 0.16  0 0.83  0.83 1.27      0.65 0.01
-----
group: 9
  vars   n mean   sd median trimmed mad min max range skew kurtosis   se
X1     1 560 0.21 0.23    0.14    0.17 0.17  0 0.98  0.98 1.34      1.29 0.01
-----
group: 10
  vars   n mean   sd median trimmed mad min max range skew kurtosis   se
X1     1 526 0.2  0.21    0.12    0.16 0.11  0 0.88  0.88 1.41      0.8  0.01
-----
group: 11
  vars   n mean   sd median trimmed mad min max range skew kurtosis   se
X1     1 987 0.23 0.25    0.16    0.19 0.18  0 0.99  0.99 1.3       0.72 0.01
-----
group: Unknown
NULL
[1] "danceability and album_type"

```



```

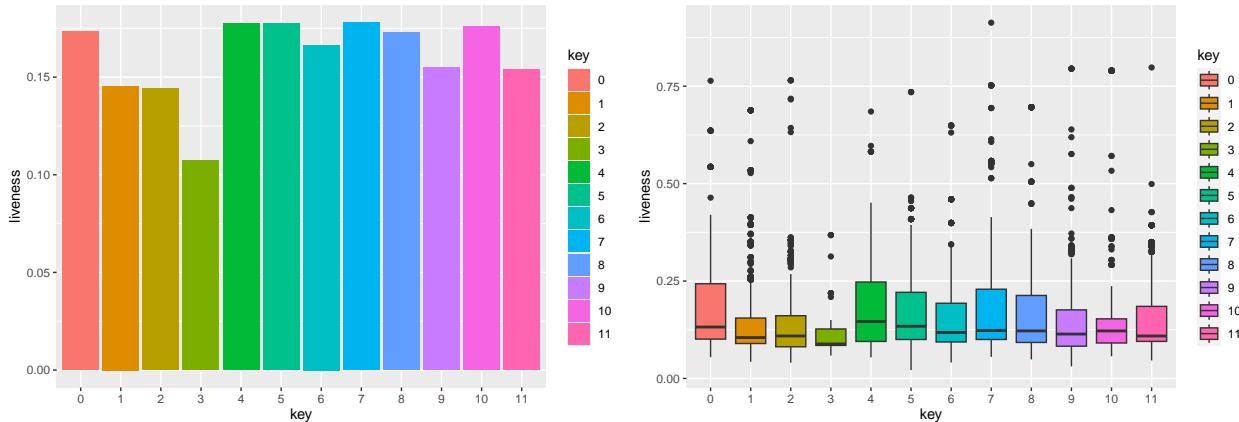
Descriptive statistics by group
group: 0
  vars   n mean   sd median trimmed mad min max range skew kurtosis se
X1     1 961 0.69 0.12    0.7    0.69 0.12 0.28 0.94  0.66 -0.3      0  0
-----
group: 1
  vars   n mean   sd median trimmed mad min max range skew kurtosis se
X1     1 1238 0.71 0.15    0.74    0.71 0.16 0.31 0.95  0.64 -0.42     -0.9  0
-----
group: 2
  vars   n mean   sd median trimmed mad min max range skew kurtosis se

```

```

X1      1 689 0.71 0.13   0.73     0.72 0.11 0.23 0.96  0.73 -1.07      1.83  0
-----
group: 3
  vars   n mean   sd median trimmed   mad   min   max range skew kurtosis   se
X1      1 186 0.65 0.16   0.72     0.65 0.12 0.29 0.91  0.62 -0.46    -0.88 0.01
-----
group: 4
  vars   n mean   sd median trimmed   mad   min   max range skew kurtosis   se
X1      1 455 0.68 0.15   0.72     0.7  0.09 0.22 0.91  0.69 -0.9     0.14 0.01
-----
group: 5
  vars   n mean   sd median trimmed   mad   min   max range skew kurtosis se
X1      1 768 0.69 0.12   0.69     0.69 0.13 0.36 0.96  0.61 -0.21    0.33  0
-----
group: 6
  vars   n mean   sd median trimmed   mad   min   max range skew kurtosis se
X1      1 834 0.71 0.12   0.73     0.72 0.14 0.3  0.92  0.62 -0.8     0.71  0
-----
group: 7
  vars   n mean   sd median trimmed   mad   min   max range skew kurtosis se
X1      1 753 0.7  0.13   0.72     0.71 0.1  0.24 0.91  0.67 -1.05    1.44  0
-----
group: 8
  vars   n mean   sd median trimmed   mad   min   max range skew kurtosis se
X1      1 878 0.72 0.1   0.74     0.72 0.09 0.36 0.94  0.58 -0.43   -0.33  0
-----
group: 9
  vars   n mean   sd median trimmed   mad   min   max range skew kurtosis se
X1      1 560 0.71 0.14   0.72     0.72 0.13 0.31 0.93  0.61 -0.71    0.73 0.01
-----
group: 10
  vars   n mean   sd median trimmed   mad   min   max range skew kurtosis se
X1      1 526 0.71 0.13   0.72     0.72 0.12 0.32 0.92  0.6 -0.67    0.28 0.01
-----
group: 11
  vars   n mean   sd median trimmed   mad   min   max range skew kurtosis se
X1      1 987 0.75 0.12   0.76     0.76 0.09 0.26 0.93  0.67 -1.44    3.39  0
-----
group: Unknown
NULL
[1] "liveness and album_type"

```



#### Descriptive statistics by group

group: 0

vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se	
X1	1	961	0.17	0.11	0.13	0.16	0.05	0.05	0.76	0.71	1.82	3.88	0

---

group: 1

vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se	
X1	1	1238	0.15	0.11	0.1	0.12	0.03	0.04	0.69	0.65	2.55	7.22	0

---

group: 2

vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se	
X1	1	689	0.14	0.1	0.11	0.13	0.06	0.04	0.76	0.72	2.66	10.79	0

---

group: 3

vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se	
X1	1	186	0.11	0.05	0.09	0.1	0.01	0.06	0.37	0.31	3.25	12.69	0

---

group: 4

vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se	
X1	1	455	0.18	0.11	0.15	0.16	0.08	0.05	0.69	0.63	1.55	2.9	0

---

group: 5

vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se	
X1	1	768	0.18	0.11	0.13	0.16	0.06	0.02	0.74	0.71	1.48	2.37	0

---

group: 6

vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se	
X1	1	834	0.17	0.11	0.12	0.15	0.06	0.04	0.65	0.61	1.91	3.79	0

---

group: 7

vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se	
X1	1	753	0.18	0.14	0.12	0.15	0.05	0.06	0.91	0.86	2.3	5.37	0.01

---

group: 8

vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se	
X1	1	878	0.17	0.14	0.12	0.15	0.07	0.05	0.7	0.65	2.18	4.84	0

---

group: 9

vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
------	---	------	----	--------	---------	-----	-----	-----	-------	------	----------	----

```
X1      1 560 0.15 0.12   0.11    0.13 0.05 0.03 0.8   0.76 2.55      8.6 0.01
```

group: 10

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	526	0.18	0.17	0.12	0.13	0.05	0.06	0.79	0.73	2.88	7.46	0.01

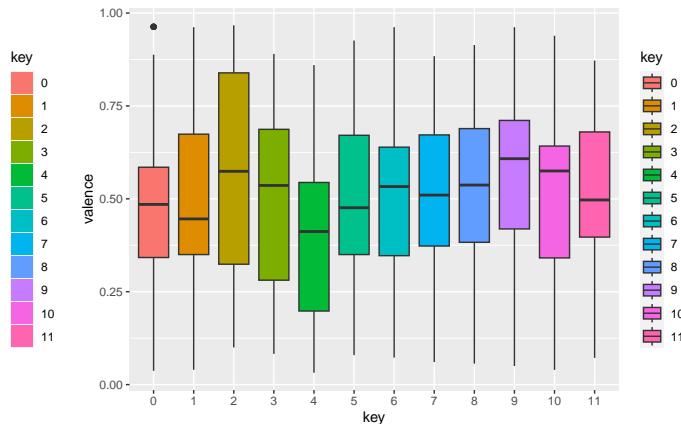
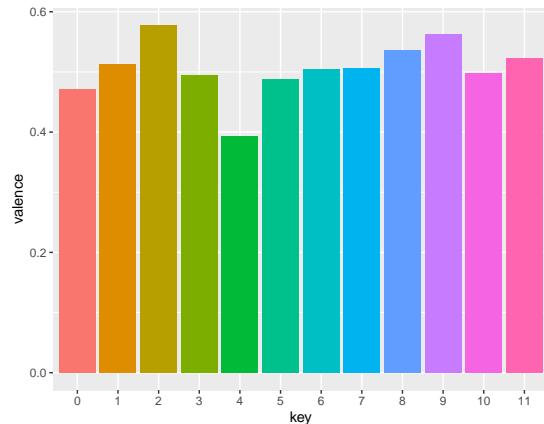
group: 11

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	987	0.15	0.09	0.11	0.14	0.04	0.05	0.8	0.75	1.49	2.4	0

group: Unknown

NULL

[1] "valence and album\_type"



Descriptive statistics by group

group: 0

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	961	0.47	0.19	0.48	0.47	0.21	0.04	0.96	0.93	-0.06	-0.53	0.01

group: 1

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	1238	0.51	0.22	0.45	0.5	0.18	0.04	0.96	0.92	0.48	-0.71	0.01

group: 2

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	689	0.58	0.26	0.57	0.58	0.39	0.1	0.97	0.87	-0.06	-1.41	0.01

group: 3

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	186	0.49	0.24	0.54	0.49	0.36	0.08	0.89	0.81	-0.08	-1.45	0.02

group: 4

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	455	0.39	0.22	0.41	0.38	0.29	0.03	0.86	0.83	0.27	-1.02	0.01

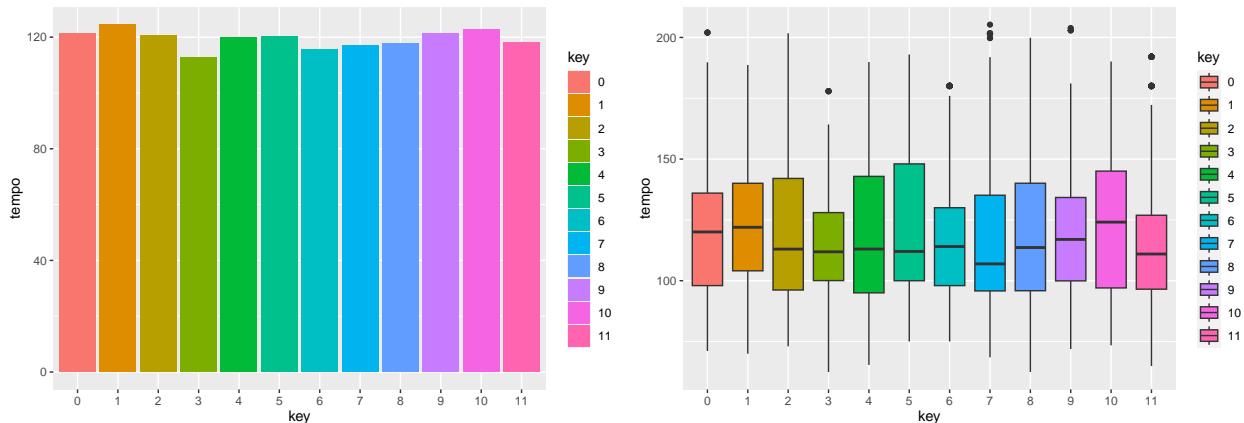
group: 5

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	768	0.49	0.22	0.48	0.49	0.27	0.08	0.93	0.85	-0.07	-0.84	0.01

```

group: 6
  vars   n mean   sd median trimmed   mad   min   max range skew kurtosis   se
X1     1 834 0.51 0.21    0.53      0.5 0.24 0.07 0.96  0.89 0.08    -0.66 0.01
-----
group: 7
  vars   n mean   sd median trimmed   mad   min   max range skew kurtosis   se
X1     1 753 0.51 0.2    0.51      0.51 0.23 0.06 0.88  0.82 -0.09    -0.64 0.01
-----
group: 8
  vars   n mean   sd median trimmed   mad   min   max range skew kurtosis   se
X1     1 878 0.54 0.21    0.54      0.54 0.23 0.06 0.91  0.86 0.02    -0.72 0.01
-----
group: 9
  vars   n mean   sd median trimmed   mad   min   max range skew kurtosis   se
X1     1 560 0.56 0.22    0.61      0.57 0.2 0.05 0.96  0.91 -0.5    -0.6 0.01
-----
group: 10
  vars   n mean   sd median trimmed   mad   min   max range skew kurtosis   se
X1     1 526 0.5 0.2     0.58      0.5 0.18 0.04 0.94  0.9 -0.32    -0.71 0.01
-----
group: 11
  vars   n mean   sd median trimmed   mad   min   max range skew kurtosis   se
X1     1 987 0.52 0.2     0.5      0.53 0.2 0.07 0.87  0.8 -0.09    -0.56 0.01
-----
group: Unknown
NULL
[1] "tempo and album_type"

```



```

Descriptive statistics by group
group: 0
  vars   n   mean   sd median trimmed   mad   min   max range skew kurtosis   se
X1     1 961 121.21 25.82 120.04  118.46 31.17 71.11 202.01 130.9 0.69    -0.2
      se
X1 0.83
-----
group: 1
  vars   n   mean   sd median trimmed   mad   min   max range skew kurtosis   se
X1     1 1238 124.49 26.97 121.96  123.22 26.64 69.99 188.7 118.71 0.36    -0.8
      se

```

```

X1 0.77
-----
group: 2
  vars   n   mean     sd median trimmed   mad   min    max range skew kurtosis
X1      1 689 120.47 30.65 112.98  117.67 32.65 72.99 201.74 128.75 0.71   -0.44
      se
X1 1.17
-----
group: 3
  vars   n   mean     sd median trimmed   mad   min    max range skew kurtosis
X1      1 186 112.65 18.78 111.88  111.22 17.55 62.45 177.91 115.47  1     1.68
      se
X1 1.38
-----
group: 4
  vars   n   mean     sd median trimmed   mad   min    max range skew kurtosis
X1      1 455 119.81 27.79 113.01  117.92 30.95 65.38 189.89 124.52  0.5   -0.81
      se
X1 1.3
-----
group: 5
  vars   n   mean     sd median trimmed   mad min    max range skew kurtosis
X1      1 768 120.27 28.16 112.02  118.65 28.23 75 193.02 118.01 0.49   -0.99
      se
X1 1.02
-----
group: 6
  vars   n   mean     sd median trimmed   mad min    max range skew kurtosis
X1      1 834 115.62 24.98 114.04  112.76 23.78 75 180.07 105.06 0.87   0.13
      se
X1 0.87
-----
group: 7
  vars   n   mean     sd median trimmed   mad min    max range skew kurtosis
X1      1 753 117.07 32.61 106.91  113.8 29.46 68.5 205.27 136.77 0.81   -0.21
      se
X1 1.19
-----
group: 8
  vars   n   mean     sd median trimmed   mad   min    max range skew kurtosis
X1      1 878 117.79 29.21 113.63  116.2 27.61 62.48 199.86 137.38 0.53   -0.3
      se
X1 0.99
-----
group: 9
  vars   n   mean     sd median trimmed   mad   min    max range skew kurtosis
X1      1 560 121.37 26.91 116.97  118.76 25.27 71.88 203.86 131.98 0.72   0.05
      se
X1 1.14
-----
group: 10
  vars   n   mean     sd median trimmed   mad   min    max range skew kurtosis
X1      1 526 122.64 28.16 124.08  121.1 31.25 73.42 190.1 116.68 0.33   -0.73
      se

```

```
X1 1.23
```

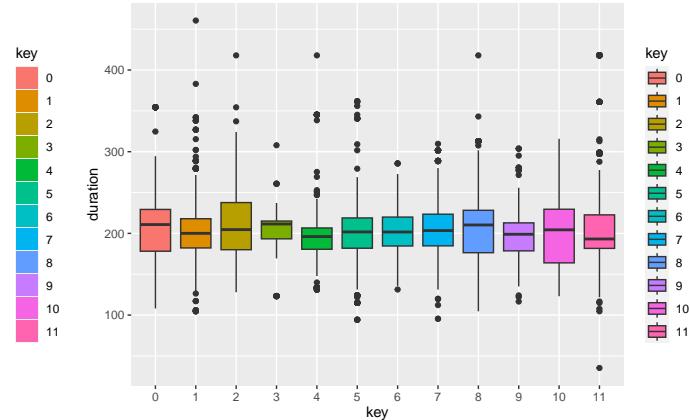
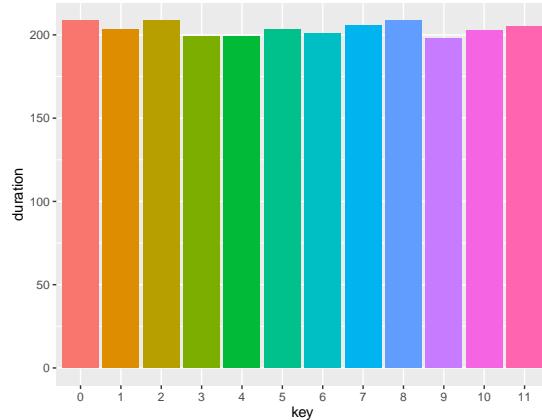
```
group: 11
```

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis
X1	1	987	117.92	27.7	110.96	114.72	23.31	64.93	192.09	127.16	0.85	-0.07
	se											
X1	0.88											

```
group: Unknown
```

```
NULL
```

```
[1] "duration and album_type"
```



```
Descriptive statistics by group
```

```
group: 0
```

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew
X1	1	961	208.38	39.62	210.77	206.84	34.12	108.03	354.32	246.29	0.64
	kurtosis	se									
X1		2.22	1.28								

```
group: 1
```

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew
X1	1	1238	203.01	32.97	200.04	200.43	26.51	104.59	460.57	355.98	1.26
	kurtosis	se									
X1		5.58	0.94								

```
group: 2
```

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew
X1	1	689	208.62	41.44	204.6	207.14	41.44	127.95	417.92	289.97	0.42
	kurtosis	se									
X1		0.44	1.58								

```
group: 3
```

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew
X1	1	186	199.21	29.36	211.48	203.16	6.35	123.26	307.88	184.62	-0.94
	kurtosis	se									
X1		2.21	2.15								

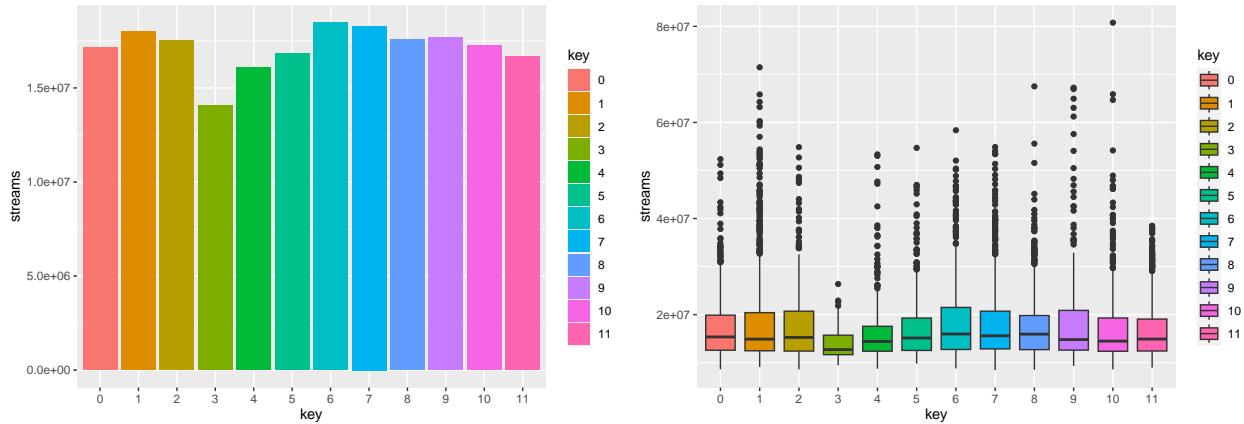
```
group: 4
```

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis
--	------	---	------	----	--------	---------	-----	-----	-----	-------	------	----------

```

X1      1 455 199.1 39.2 196.08 195.26 22.62 131.06 417.92 286.86 2.05      6.94
      se
X1 1.84
-----
group: 5
  vars   n   mean     sd median trimmed   mad   min    max range skew kurtosis
X1      1 768 203.15 40.44 201.8 202.99 29.63 94.25 361.95 267.7 0.41      2.11
      se
X1 1.46
-----
group: 6
  vars   n   mean     sd median trimmed   mad   min    max range skew
X1      1 834 201.09 25.03 201.71 201.34 25.42 131.28 285.63 154.35 -0.06
      kurtosis   se
X1      -0.17 0.87
-----
group: 7
  vars   n   mean     sd median trimmed   mad   min    max range skew kurtosis
X1      1 753 205.72 38.33 203.42      205 28.37 95.47 309.64 214.17 0.24      0.48
      se
X1 1.4
-----
group: 8
  vars   n   mean     sd median trimmed   mad   min    max range skew
X1      1 878 208.39 38.56 210.29 204.95 31.58 104.59 417.92 313.33 0.87
      kurtosis   se
X1      1.69 1.3
-----
group: 9
  vars   n   mean     sd median trimmed   mad   min    max range skew
X1      1 560 197.86 30.52 198.9 198.26 24.76 116.56 303.78 187.22 0.09
      kurtosis   se
X1      0.78 1.29
-----
group: 10
  vars   n   mean     sd median trimmed   mad   min    max range skew
X1      1 526 202.86 40.76 204.35 199.53 39.91 123.04 315.77 192.73 0.62
      kurtosis   se
X1      0.21 1.78
-----
group: 11
  vars   n   mean     sd median trimmed   mad   min    max range skew kurtosis
X1      1 987 205.28 52.02 193.14 197.89 29.9 35.24 417.92 382.68 2.12      6.23
      se
X1 1.66
-----
group: Unknown
NULL
[1] "streams and album_type"

```



#### Descriptive statistics by group

group: 0

	vars	n	mean	sd	median	trimmed	mad	min	max
X1	1	961	17172434	6220177	15352945	16256669	4725799	8616666	52357127
			range	skew	kurtosis		se		
X1		43740461	1.65		3.85	200650.9			

group: 1

	vars	n	mean	sd	median	trimmed	mad	min	max
X1	1	1238	17992011	8764198	14899213	16246430	4668155	9101506	71467874
			range	skew	kurtosis		se		
X1		62366368	2.36		6.73	249087.5			

group: 2

	vars	n	mean	sd	median	trimmed	mad	min	max
X1	1	689	17521891	7003768	15254844	16404726	5145821	8595924	54848635
			range	skew	kurtosis		se		
X1		46252711	1.87		4.77	266822.3			

group: 3

	vars	n	mean	sd	median	trimmed	mad	min	max
X1	1	186	14049496	3256121	12717532	13600350	2090213	9468277	26362706
			range	skew	kurtosis		se		
X1		16894429	1.18		0.72	238750.4			

group: 4

	vars	n	mean	sd	median	trimmed	mad	min	max
X1	1	455	16090438	6299197	14417280	14991749	3624910	8739078	53344093
			range	skew	kurtosis		se		
X1		44605015	2.75		10.3	295310.9			

group: 5

	vars	n	mean	sd	median	trimmed	mad	min	max
X1	1	768	16834194	6095807	15133155	15885623	4533491	9792452	54707620
			range	skew	kurtosis		se		
X1		44915168	2.04		6.08	219963.5			

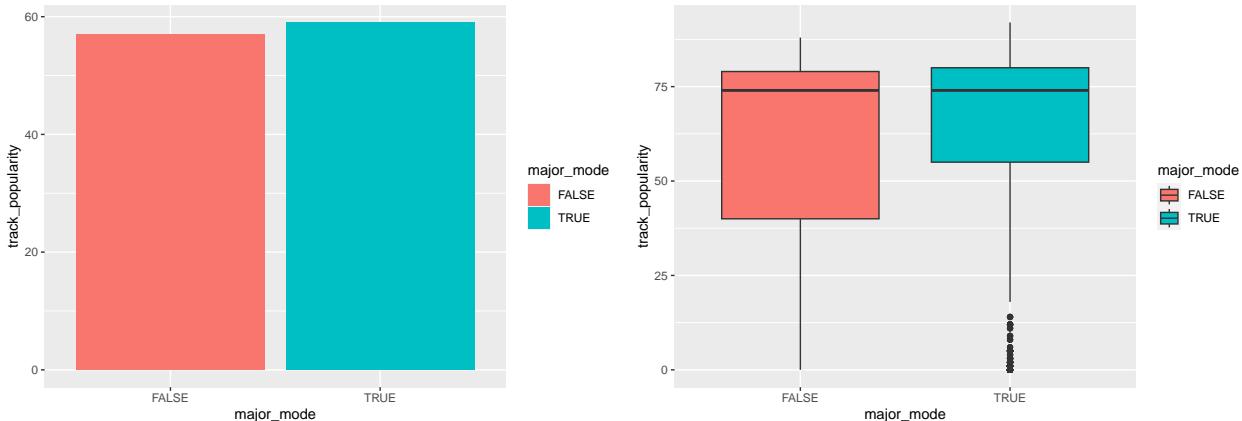
group: 6

	vars	n	mean	sd	median	trimmed	mad	min	max
--	------	---	------	----	--------	---------	-----	-----	-----

```

X1      1 834 18471054 7953661 15964896 17065521 5658311 8796175 58370367
       range skew kurtosis      se
X1 49574192 1.74      3.34 275412.8
-----
group: 7
  vars   n     mean      sd   median   trimmed     mad     min     max
X1      1 753 18293638 8016652 15593825 16788706 4999129 8454914 54891573
       range skew kurtosis      se
X1 46436659 1.87      3.77 292143.1
-----
group: 8
  vars   n     mean      sd   median   trimmed     mad     min     max
X1      1 878 17560169 6655667 15933418 16550989 5214939 8509565 67499798
       range skew kurtosis      se
X1 58990233 1.9      6.22 224617.9
-----
group: 9
  vars   n     mean      sd   median   trimmed     mad     min     max
X1      1 560 17703711 8263057 14805863 16261057 4365387 9304477 67237638
       range skew kurtosis      se
X1 57933161 2.78      10.73 349177.9
-----
group: 10
  vars   n     mean      sd   median   trimmed     mad     min     max
X1      1 526 17250867 8259333 14486297 15642668 4036208 8602986 80764045
       range skew kurtosis      se
X1 72161059 2.92      12.46 360124
-----
group: 11
  vars   n     mean      sd   median   trimmed     mad     min     max
X1      1 987 16684678 5739873 14910847 15789618 4339419 8953677 38506427
       range skew kurtosis      se
X1 29552750 1.38      1.54 182702.2
-----
group: Unknown
NULL
[1] "track_popularity and album_type"

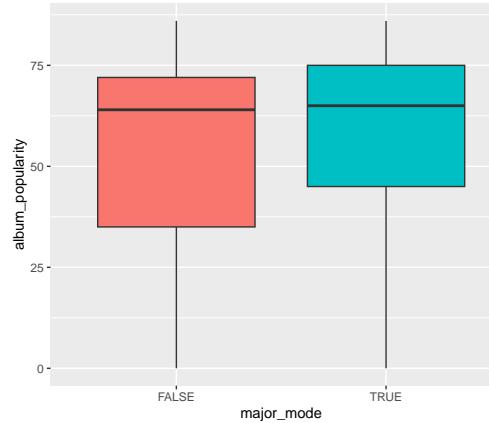
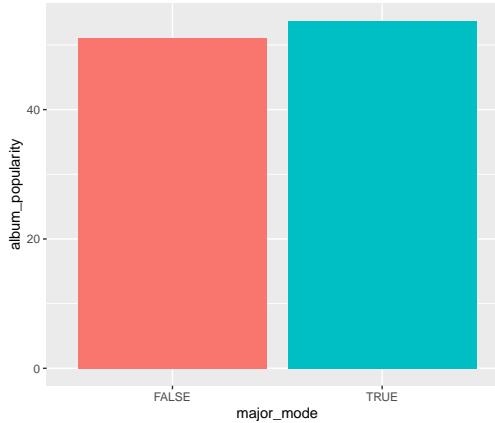
```



Descriptive statistics by group

```
group: FALSE
  vars   n  mean    sd median trimmed mad min max range skew kurtosis   se
X1     1 3908 57.08 32.05      74    60.8 8.9    0  88    88 -1.07    -0.69 0.51
```

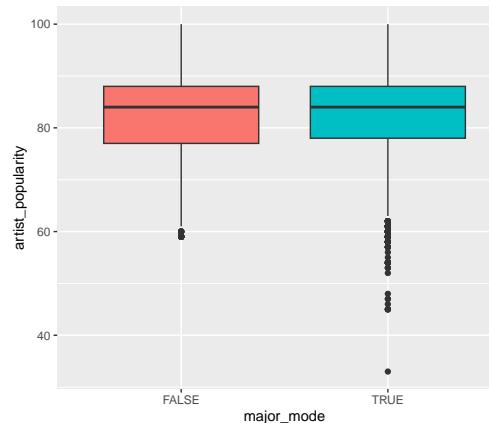
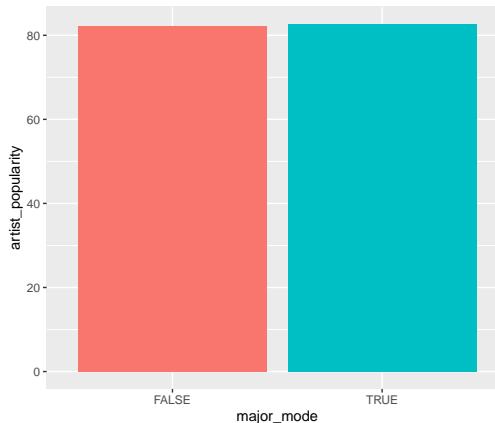
```
group: TRUE
  vars   n  mean    sd median trimmed mad min max range skew kurtosis   se
X1     1 4927 59.02 31.38      74    62.95 11.86   0  92    92 -1.15    -0.41 0.45
[1] "album_popularity and album_type"
```



Descriptive statistics by group

```
group: FALSE
  vars   n  mean    sd median trimmed mad min max range skew kurtosis   se
X1     1 3908 51.12 29.99      64    53.61 14.83   0  86    86 -0.92    -0.81 0.48
```

```
group: TRUE
  vars   n  mean    sd median trimmed mad min max range skew kurtosis   se
X1     1 4927 53.72 30.05      65    56.61 17.79   0  86    86 -0.97    -0.65 0.43
[1] "artist_popularity and album_type"
```



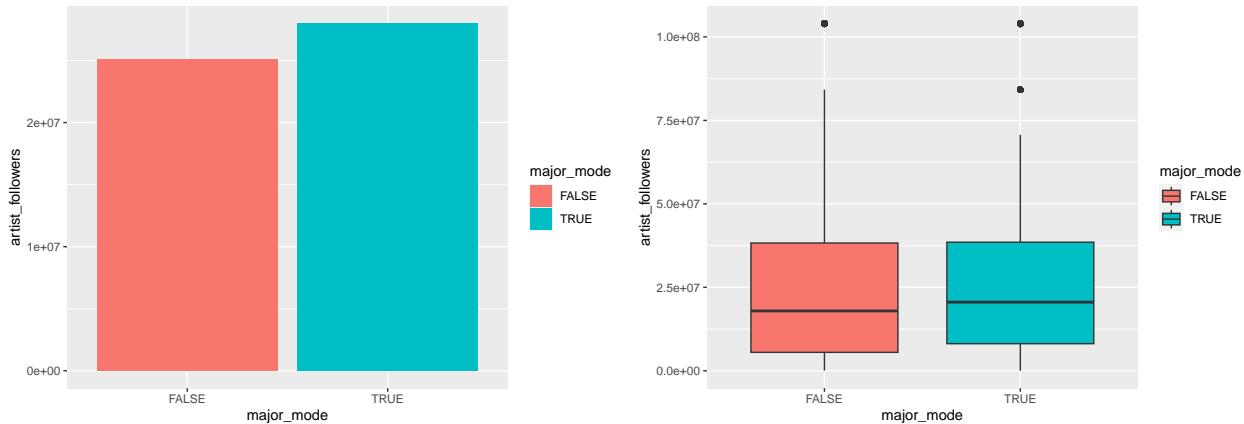
Descriptive statistics by group

```
group: FALSE
  vars   n  mean    sd median trimmed mad min max range skew kurtosis   se
X1     1 3908 82.15 8.08      84    82.66 7.41   59 100    41 -0.52    -0.07 0.13
```

```

group: TRUE
  vars   n  mean   sd median trimmed   mad min max range skew kurtosis   se
X1     1 4927 82.65 8.9      84  83.26 7.41  33 100    67 -0.77      0.98 0.13
[1] "artist_followers and album_type"

```



Descriptive statistics by group

```

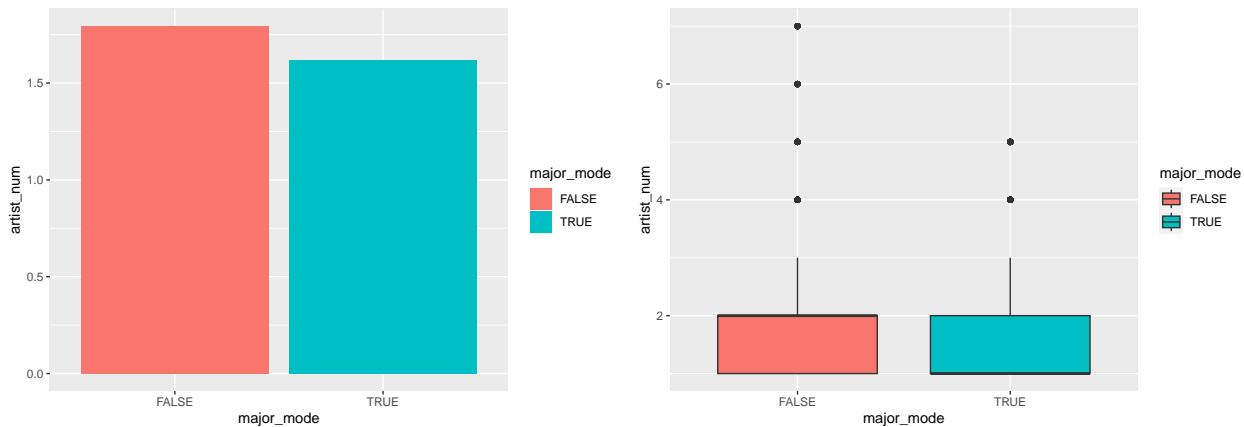
group: FALSE
  vars   n  mean   sd median trimmed   mad min max
X1     1 3908 25091637 24970349 17929017 21110300 22161573 42127 104059839
          range skew kurtosis   se
X1 104017712 1.31      1.31 399436.1
-----
```

group: TRUE

```

  vars   n  mean   sd median trimmed   mad min max
X1     1 4927 27992076 25877202 20554264 24395161 22908762 3805 104059839
          range skew kurtosis   se
X1 104056034 1.13      0.61 368660
[1] "artist_num and album_type"

```



Descriptive statistics by group

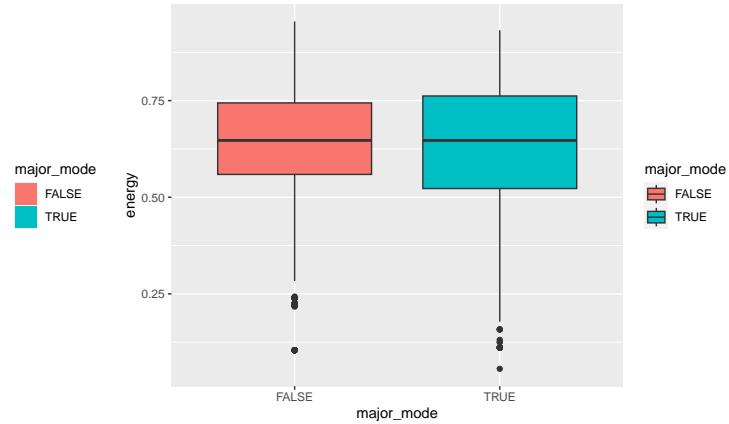
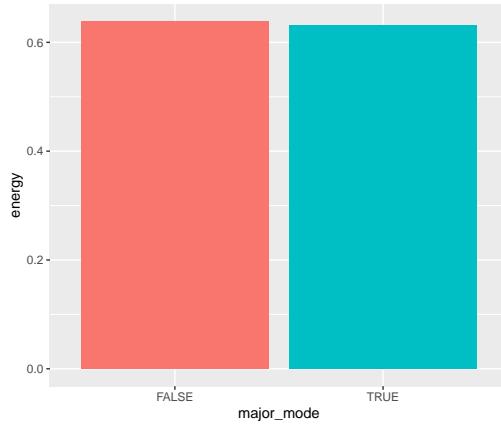
```

group: FALSE
  vars   n  mean   sd median trimmed   mad min max range skew kurtosis   se
X1     1 3908 1.79 1.01      2  1.62 1.48  1    7    6 1.83      4.57 0.02
-----
```

```

group: TRUE
  vars   n  mean    sd median trimmed mad min max range skew kurtosis    se
X1     1 4927 1.62 0.81      1    1.47  0   1   5      4 1.69      3.76 0.01
[1] "energy and album_type"

```



Descriptive statistics by group

group: FALSE

```

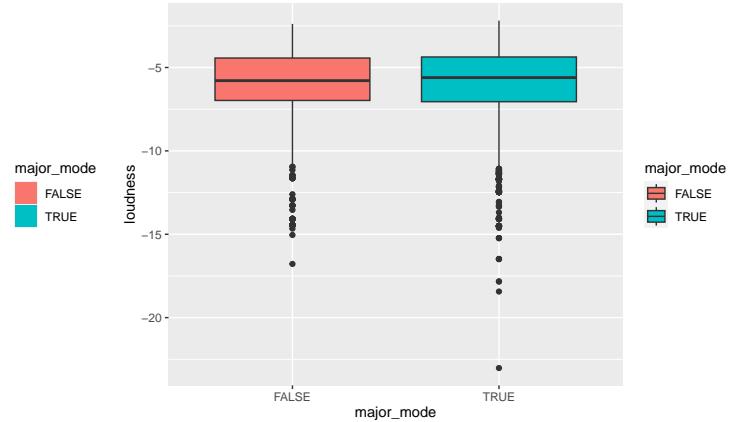
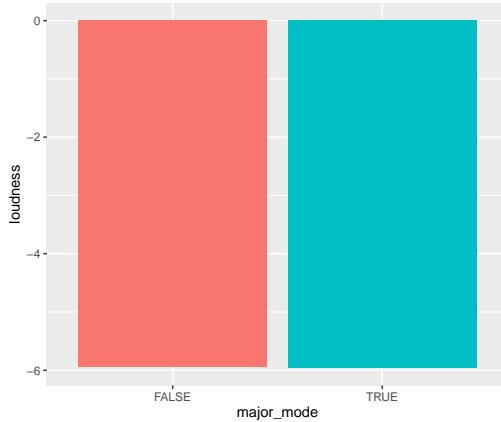
  vars   n  mean    sd median trimmed mad min max range skew kurtosis    se
X1     1 3908 0.64 0.14      0.65    0.65  0.14 0.1 0.96  0.85 -0.66      0.63 0
-----
```

group: TRUE

```

  vars   n  mean    sd median trimmed mad min max range skew kurtosis    se
X1     1 4927 0.63 0.15      0.65    0.64  0.18 0.06 0.93  0.88 -0.4     -0.48 0
[1] "loudness and album_type"

```



Descriptive statistics by group

group: FALSE

```

  vars   n  mean    sd median trimmed mad min max range skew kurtosis    se
X1     1 3908 -5.94 2.12     -5.79   -5.77 1.9 -16.78 -2.38 14.4 -1.04      1.97
      se
X1  0.03
-----
```

group: TRUE

```

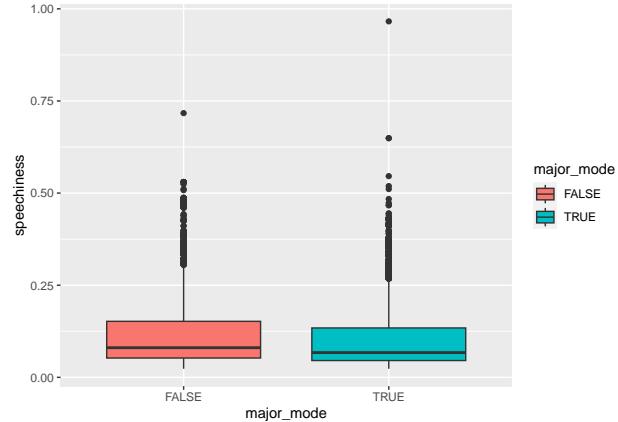
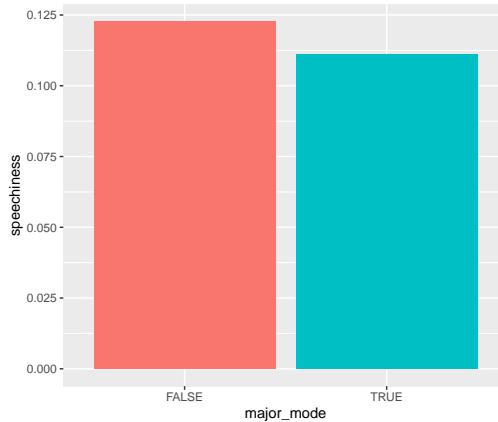
  vars   n  mean    sd median trimmed mad min max range skew kurtosis

```

```

X1      1 4927 -5.96 2.16   -5.6   -5.73 1.89 -23.02 -2.19 20.84 -1.34      3.21
      se
X1  0.03
[1] "speechiness and album_type"

```



Descriptive statistics by group  
group: FALSE

```

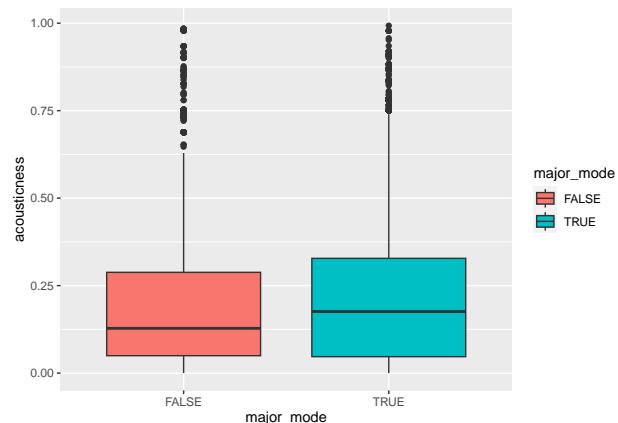
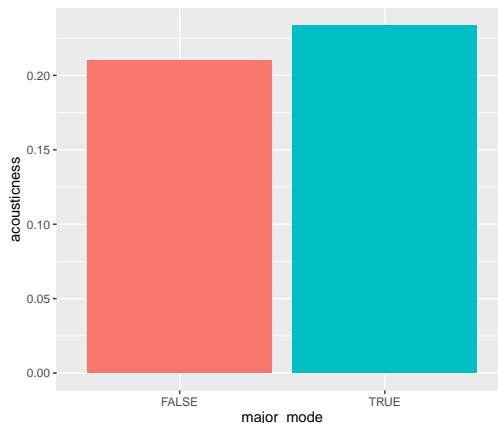
vars      n mean   sd median trimmed  mad min  max range skew kurtosis se
X1      1 3908 0.12 0.1    0.08     0.1 0.05 0.02 0.72  0.69 1.71     2.59  0
-----
```

group: TRUE

```

vars      n mean   sd median trimmed  mad min  max range skew kurtosis se
X1      1 4927 0.11 0.1    0.07     0.09 0.04 0.02 0.97  0.94 1.71     2.74  0
[1] "acousticness and album_type"

```



Descriptive statistics by group  
group: FALSE

```

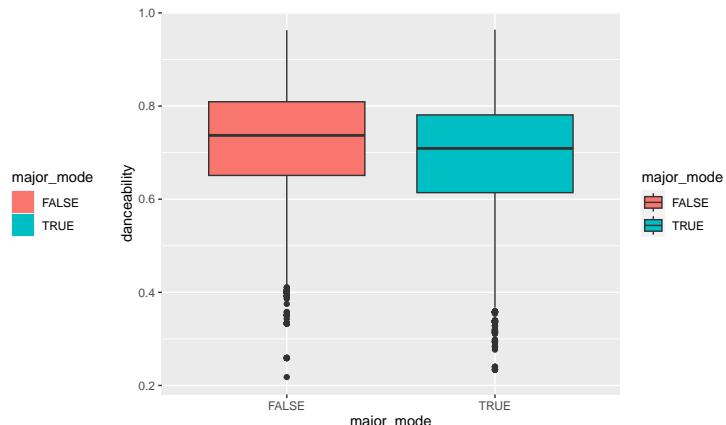
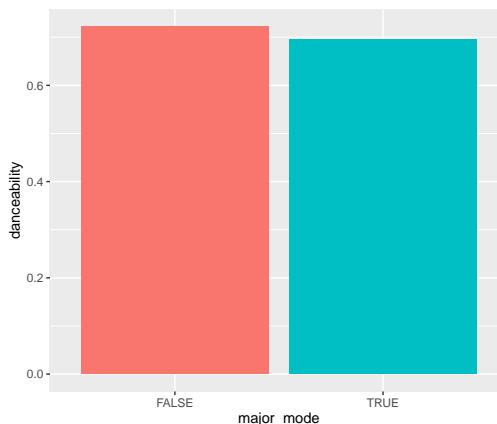
vars      n mean   sd median trimmed  mad min  max range skew kurtosis se
X1      1 3908 0.21 0.22    0.13     0.17 0.14    0 0.98  0.98 1.46     1.53  0
-----
```

group: TRUE

```

vars      n mean   sd median trimmed  mad min  max range skew kurtosis se
X1      1 4927 0.23 0.23    0.18     0.2 0.21    0 0.99  0.99 1.18     0.54  0
[1] "danceability and album_type"

```



#### Descriptive statistics by group

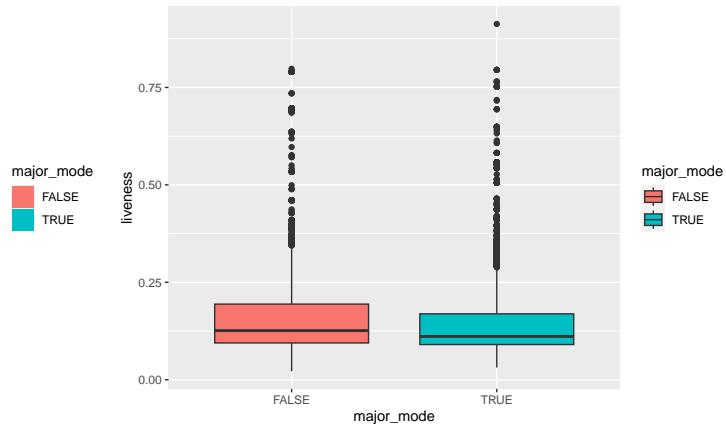
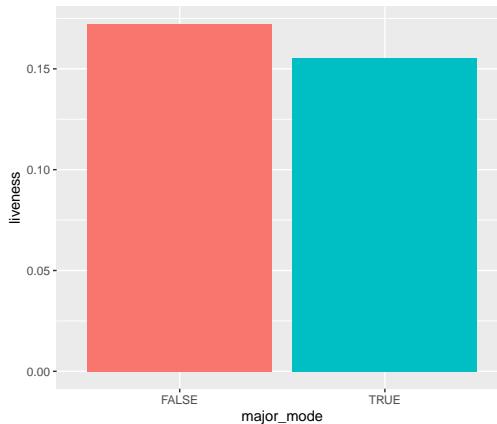
group: FALSE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	3908	0.72	0.13	0.74	0.73	0.73	0.12	0.22	0.96	0.74	-0.85	0.85

group: TRUE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	4927	0.7	0.13	0.71	0.7	0.7	0.12	0.23	0.96	0.73	-0.63	0.38

[1] "liveness and album\_type"



#### Descriptive statistics by group

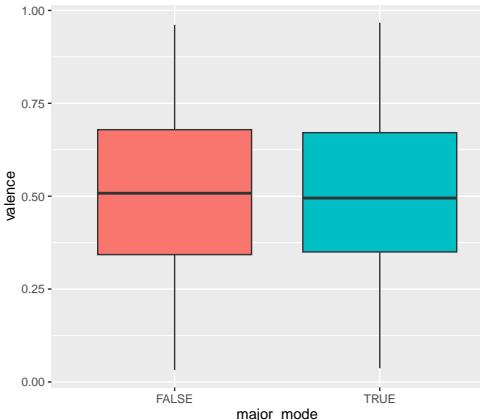
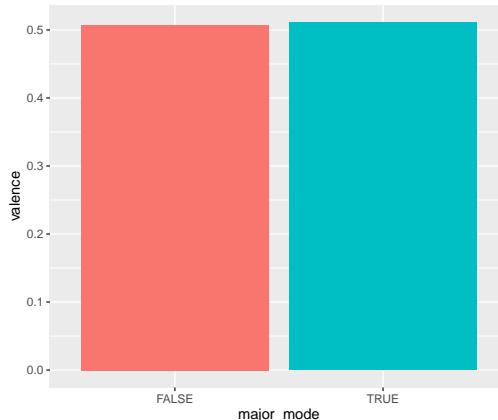
group: FALSE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	3908	0.17	0.13	0.13	0.15	0.15	0.06	0.02	0.8	0.78	2.41	6.9

group: TRUE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	4927	0.16	0.11	0.11	0.13	0.13	0.04	0.03	0.91	0.88	2.27	6.54

[1] "valence and album\_type"



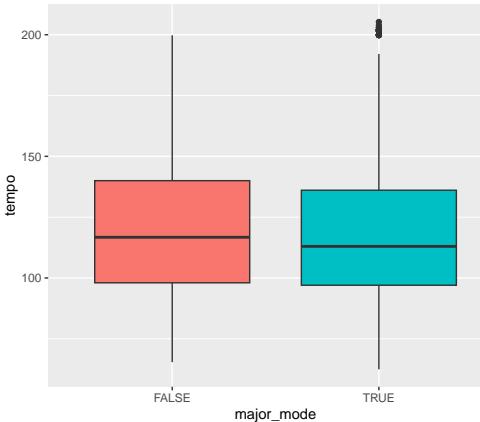
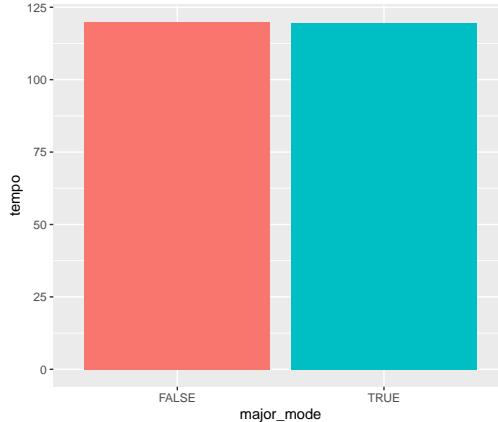
#### Descriptive statistics by group

group: FALSE

```
vars   n  mean   sd median trimmed  mad  min  max range skew kurtosis se
X1     1 3908 0.51 0.23    0.51    0.51 0.25 0.03 0.96 0.93 -0.06   -0.87  0
```

group: TRUE

```
vars   n  mean   sd median trimmed  mad  min  max range skew kurtosis se
X1     1 4927 0.51 0.21    0.5     0.51 0.22 0.04 0.97 0.93 0.16   -0.66  0
[1] "tempo and album_type"
```



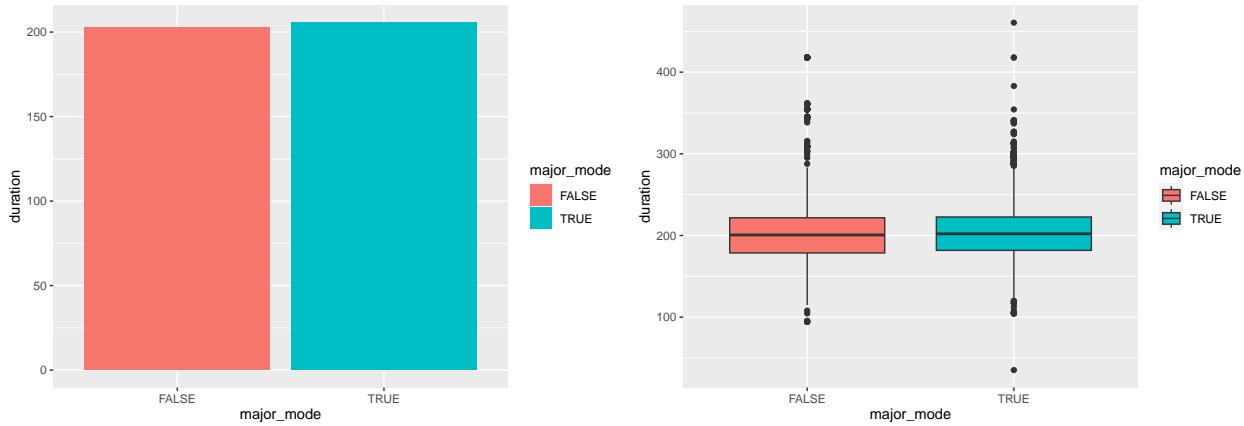
#### Descriptive statistics by group

group: FALSE

```
vars   n  mean   sd median trimmed  mad  min  max range skew
X1     1 3908 119.93 27.02 116.74  117.92 29.54 65.38 199.76 134.38 0.57
      kurtosis   se
X1     -0.47 0.43
```

group: TRUE

```
vars   n  mean   sd median trimmed  mad  min  max range skew
X1     1 4927 119.67 28.76 112.98  117.14 28.17 62.45 205.27 142.83 0.67
      kurtosis   se
X1     -0.31 0.41
[1] "duration and album_type"
```



#### Descriptive statistics by group

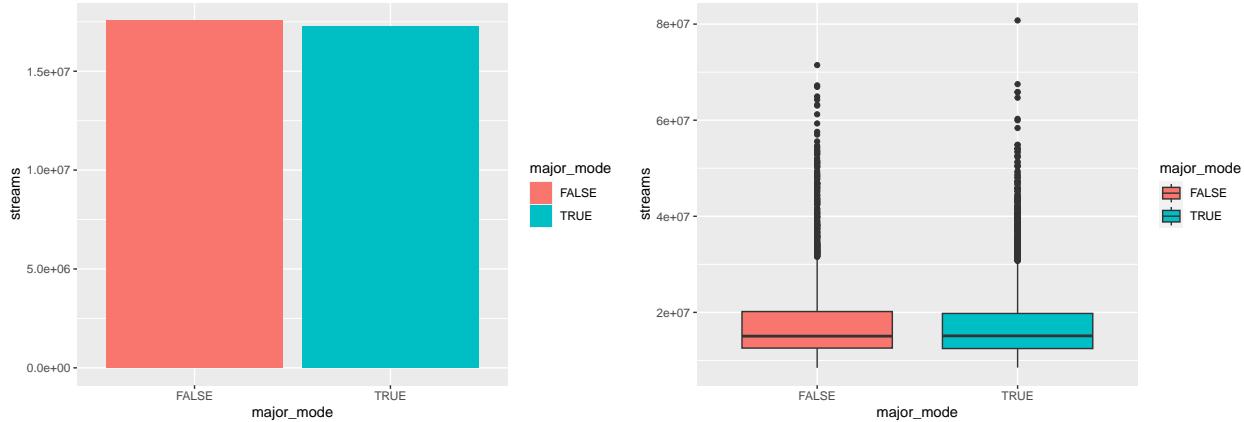
group: FALSE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew
X1	1	3908	202.63	41.99	200.67	200.36	32.13	94.25	417.92	323.68	1.44
	kurtosis										
X1		5.65	0.67								

group: TRUE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew
X1	1	4927	205.56	35.84	202.09	203.28	30.07	35.24	460.57	425.33	0.76
	kurtosis										
X1		2.1	0.51								

[1] "streams and album\_type"



#### Descriptive statistics by group

group: FALSE

	vars	n	mean	sd	median	trimmed	mad	min	max
X1	1	3908	17568028	7571894	15051934	16223199	4601566	8454914	71467874
	range								
X1		63012960	2.28	7.24	121123.2				

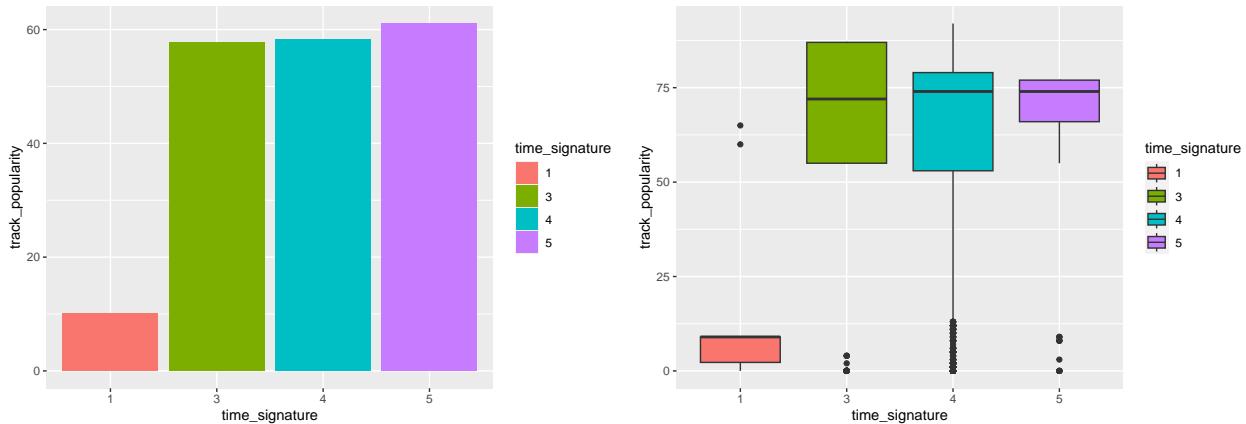
group: TRUE

	vars	n	mean	sd	median	trimmed	mad	min	max
X1	1	4927	17274239	7013273	15112221	16070450	4661935	8509565	80764045

```

range skew kurtosis      se
X1 72254480 2.23    7.62 99914.71
[1] "track_popularity and album_type"

```



Descriptive statistics by group

group: 1

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	30	10.17	14.79	9	7.12	0	0	65	65	2.89	7.65	2.7

group: 3

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	185	57.68	33.93	72	61.11	22.24	0	87	87	-0.94	-0.83	2.49

group: 4

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	8535	58.31	31.61	74	62.2	10.38	0	92	92	-1.13	-0.5	0.34

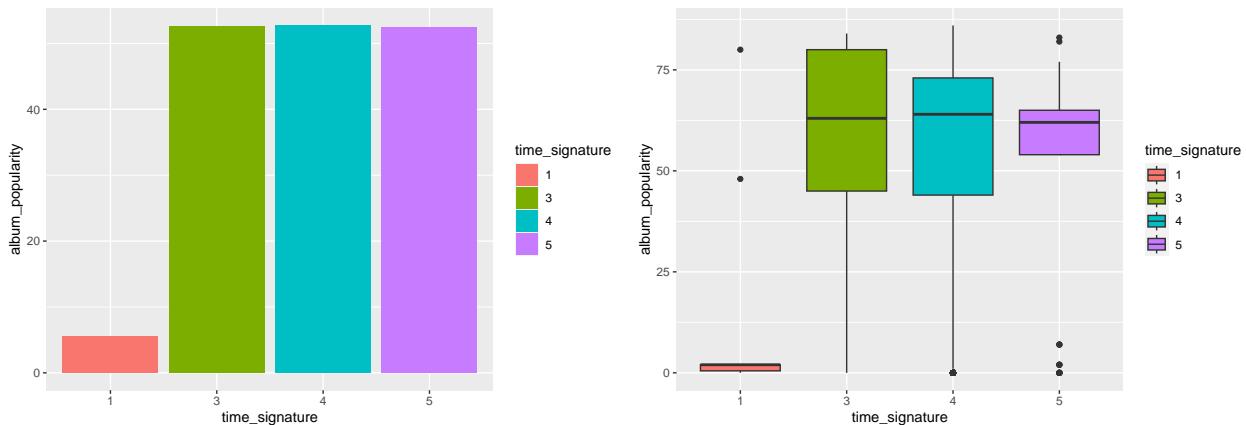
group: 5

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	85	61.07	26.94	74	66.26	4.45	0	77	77	-1.59	0.69	2.92

group: Unknown

NULL

```
[1] "album_popularity and album_type"
```



Descriptive statistics by group

group: 1

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	30	5.6	16.45	2	1.58	0	0	80	80	3.64	12.44	3

group: 3

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	185	52.52	31.8	63	55.07	25.2	0	84	84	-0.8	-0.95	2.34

group: 4

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	8535	52.73	29.98	64	55.46	16.31	0	86	86	-0.96	-0.7	0.32

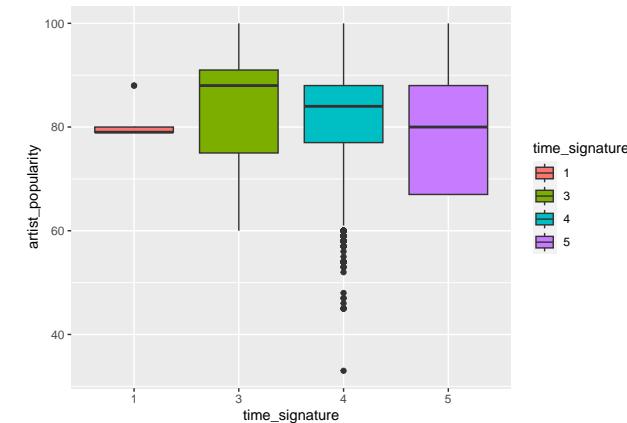
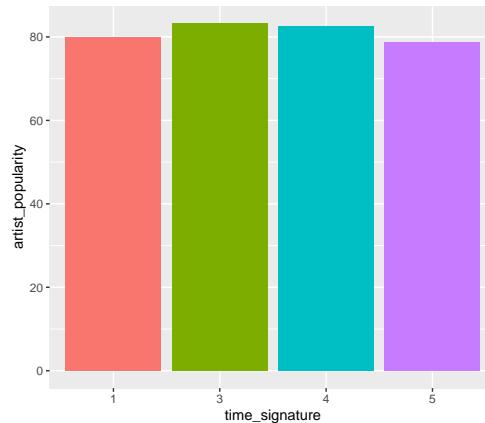
group: 5

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	85	52.51	24.08	62	56.28	4.45	0	83	83	-1.51	0.6	2.61

group: Unknown

NULL

[1] "artist\_popularity and album\_type"



Descriptive statistics by group

group: 1

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	30	79.87	2.26	79	79.29	0	79	88	9	3.09	8.3	0.41

group: 3

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	185	83.26	10.48	88	84.4	7.41	60	100	40	-0.87	-0.19	0.77

group: 4

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	8535	82.46	8.5	84	83	7.41	33	100	67	-0.67	0.69	0.09

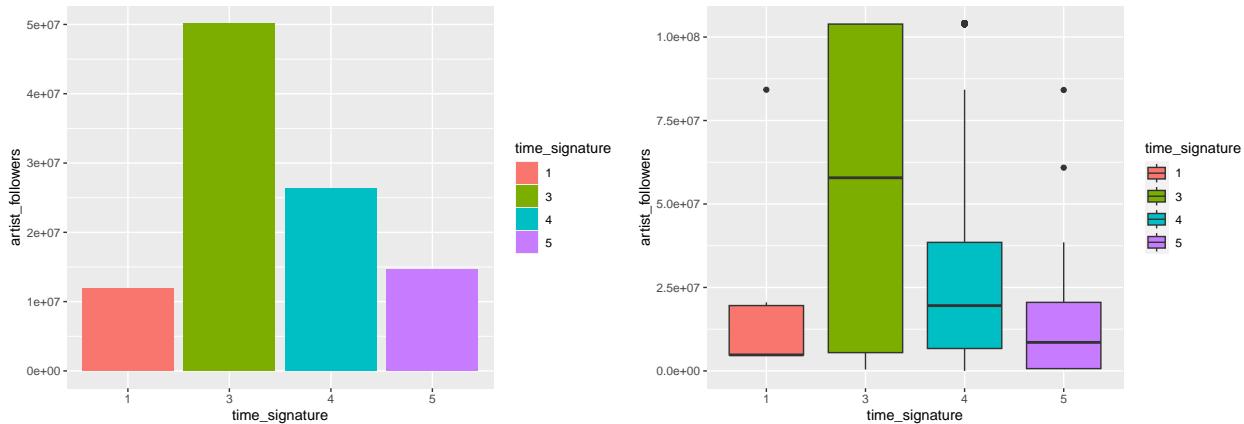
group: 5

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	85	78.85	9.94	80	78.88	11.86	67	100	33	-0.19	-1.65	1.08

```

group: Unknown
NULL
[1] "artist_followers and album_type"

```



Descriptive statistics by group

```

group: 1
  vars   n      mean       sd   median trimmed   mad   min      max    range skew
X1     1 30 11907226 15298509 4792755 9104351    0 4792755 84227300 79434545 3.49
      kurtosis      se
X1     13.7 2793113
-----
```

```

group: 3
  vars   n      mean       sd   median trimmed   mad   min      max    range skew
X1     1 185 50138005 42521498 57849231 49641600 68319418 415415 103972710
      range skew kurtosis      se
X1 103557295 0.05     -1.72 3126243
-----
```

```

group: 4
  vars   n      mean       sd   median trimmed   mad   min      max    range skew
X1     1 8535 26373860 24855500 19562506 22760063 22192433 3805 104059839
      range skew kurtosis      se
X1 104056034 1.2      0.91 269042.4
-----
```

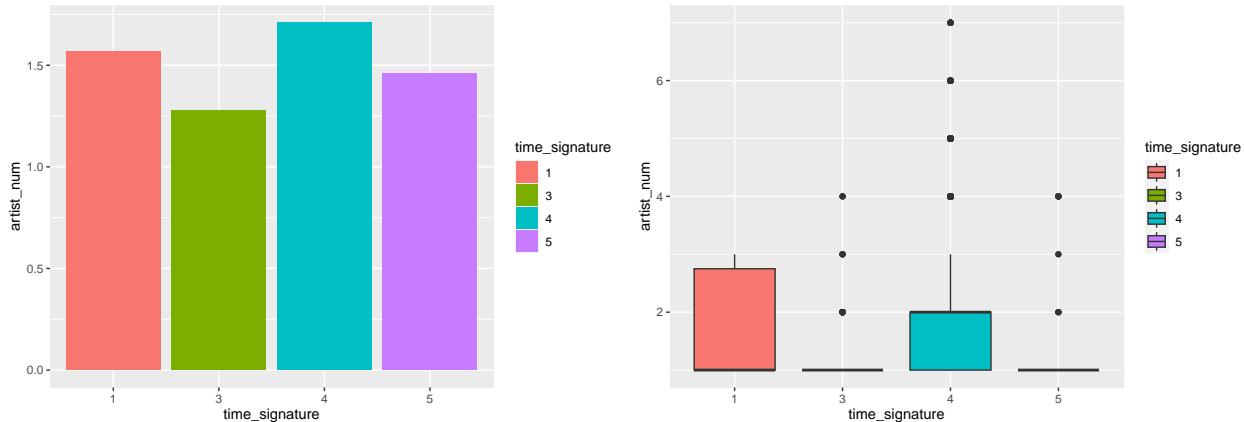
```

group: 5
  vars   n      mean       sd   median trimmed   mad   min      max    range skew
X1     1 85 14605117 15328838 8545449 12489825 11646705 689854 84143530 83453676
      skew kurtosis      se
X1 1.49      3.74 1662646
-----
```

```

group: Unknown
NULL
[1] "artist_num and album_type"

```



#### Descriptive statistics by group

group: 1

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	30	1.57	0.9	1	1.46	0	1	3	2	0.91	-1.15	0.16

group: 3

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	185	1.28	0.62	1	1.13	0	1	4	3	2.58	6.94	0.05

group: 4

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	8535	1.71	0.91	2	1.55	1.48	1	7	6	1.84	4.85	0.01

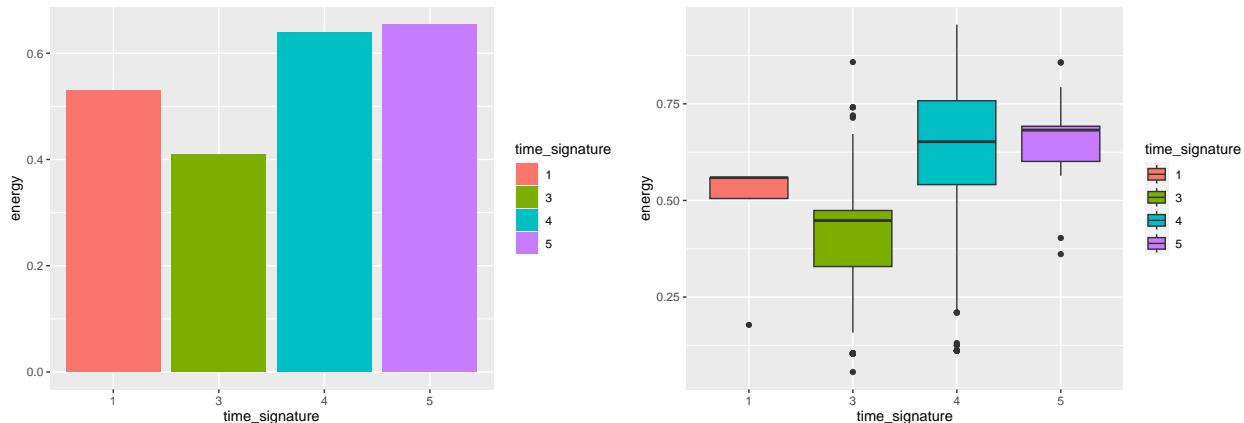
group: 5

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	85	1.46	1.01	1	1.22	0	1	4	3	1.91	1.95	0.11

group: Unknown

NULL

[1] "energy and album\_type"



#### Descriptive statistics by group

group: 1

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
--	------	---	------	----	--------	---------	-----	-----	-----	-------	------	----------	----

```
X1      1 30 0.53 0.07    0.56    0.54    0 0.18 0.56  0.38 -4.07    17.43 0.01
```

group: 3

```
vars   n mean   sd median trimmed mad   min   max range skew kurtosis   se
X1     1 185 0.41 0.16    0.45    0.42 0.1 0.06 0.86    0.8 -0.33    -0.01 0.01
```

group: 4

```
vars   n mean   sd median trimmed mad   min   max range skew kurtosis   se
X1     1 8535 0.64 0.14    0.65    0.65 0.16 0.11 0.96    0.84 -0.46    -0.26 0
```

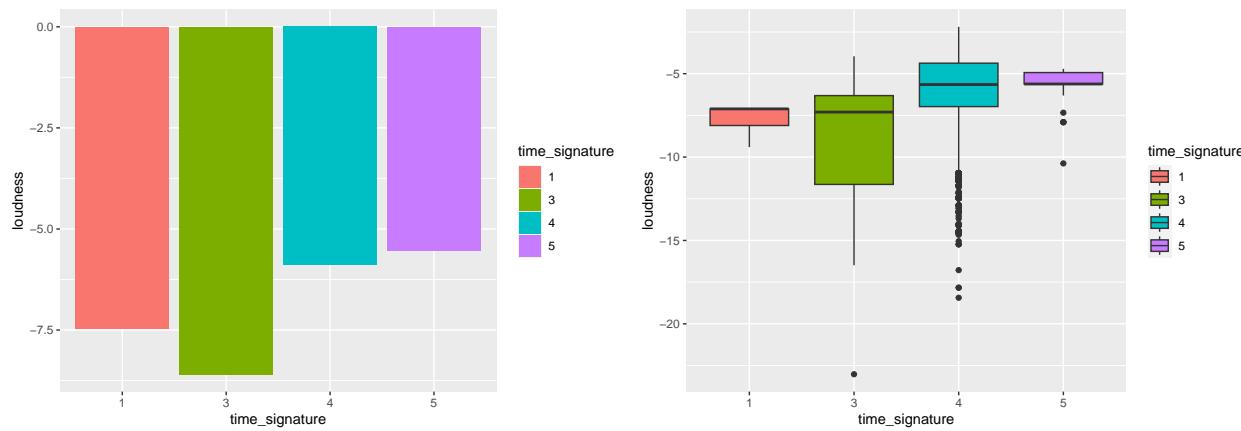
group: 5

```
vars   n mean   sd median trimmed mad   min   max range skew kurtosis   se
X1     1 85 0.65 0.08    0.68    0.65 0.12 0.36 0.86    0.5 -0.34    1.79 0.01
```

group: Unknown

NULL

```
[1] "loudness and album_type"
```



Descriptive statistics by group

group: 1

```
vars   n mean   sd median trimmed mad   min   max range skew kurtosis   se
X1     1 30 -7.46 0.58    -7.11   -7.37    0 -9.4 -7.11  2.29 -1.52    1.87 0.11
```

group: 3

```
vars   n mean   sd median trimmed mad   min   max range skew kurtosis   se
X1     1 185 -8.59 3.19    -7.3    -8.25 1.69 -23.02 -3.95 19.07 -1.14    1.24
se
X1 0.23
```

group: 4

```
vars   n mean   sd median trimmed mad   min   max range skew kurtosis   se
X1     1 8535 -5.9 2.08    -5.65   -5.71 1.92 -18.43 -2.19 16.25 -1.11    2.15
se
X1 0.02
```

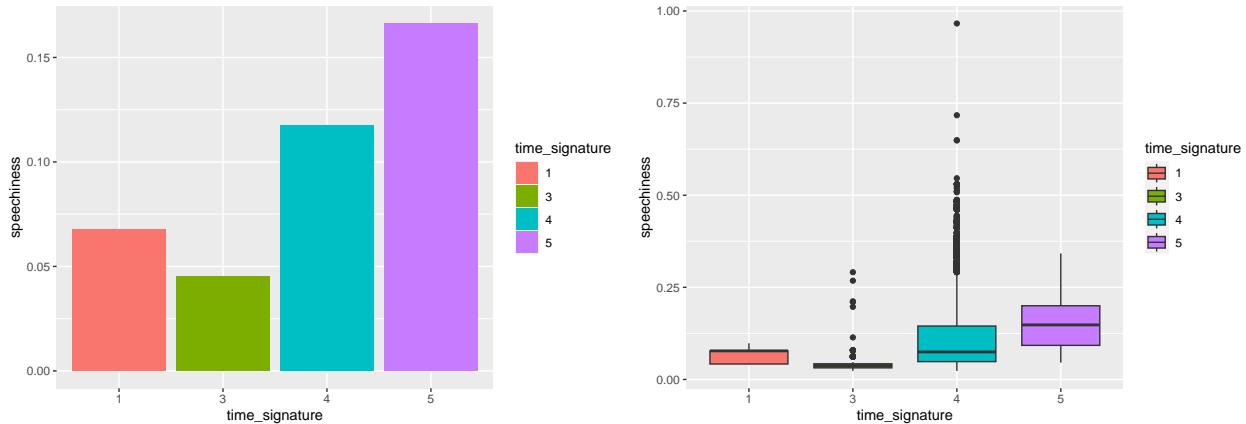
group: 5

```
vars   n mean   sd median trimmed mad   min   max range skew kurtosis   se
X1     1 85 -5.54 0.9    -5.62   -5.38 0.91 -10.38 -4.71  5.68 -2.62    9.3 0.1
```

```

group: Unknown
NULL
[1] "speechiness and album_type"

```



#### Descriptive statistics by group

group: 1

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	30	0.07	0.02	0.08	0.07	0.07	0.04	0.1	0.06	-0.65	-1.23	0

group: 3

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se	
X1	1	185	0.05	0.04	0.04	0.04	0.04	0.01	0.02	0.29	0.27	4.56	23.94	0

group: 4

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se	
X1	1	8535	0.12	0.1	0.07	0.07	0.1	0.05	0.02	0.97	0.94	1.7	2.63	0

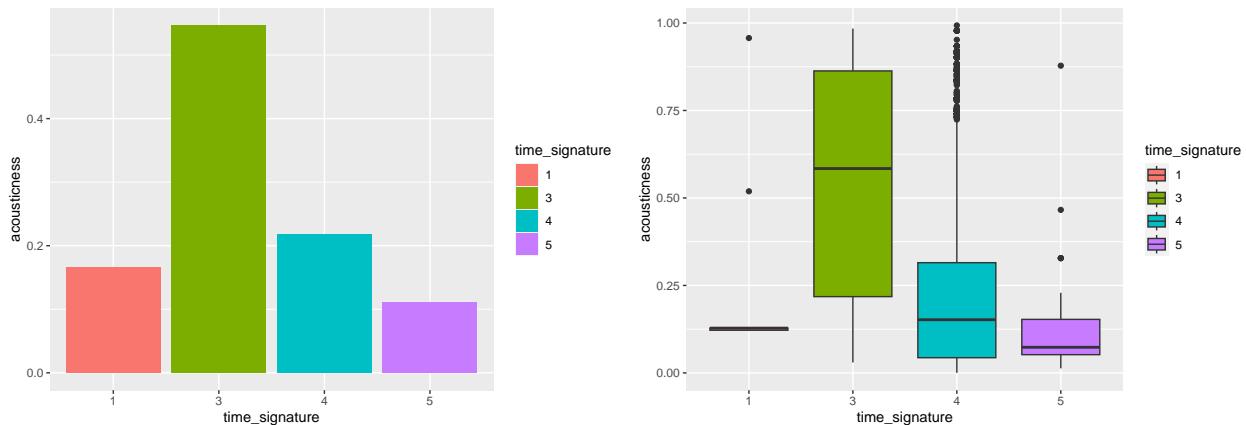
group: 5

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se	
X1	1	85	0.17	0.09	0.15	0.15	0.16	0.08	0.05	0.34	0.3	0.91	-0.36	0.01

group: Unknown

NULL

```
[1] "acousticness and album_type"
```



Descriptive statistics by group

group: 1

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se	
X1	1	30	0.17	0.17	0.13	0.13	0.13	0	0.12	0.96	0.84	3.93	14.96	0.03

group: 3

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	185	0.55	0.31	0.58	0.54	0.48	0.03	0.98	0.95	0	-1.57	0.02

group: 4

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	8535	0.22	0.22	0.15	0.18	0.17	0	0.99	0.99	1.27	0.87	0

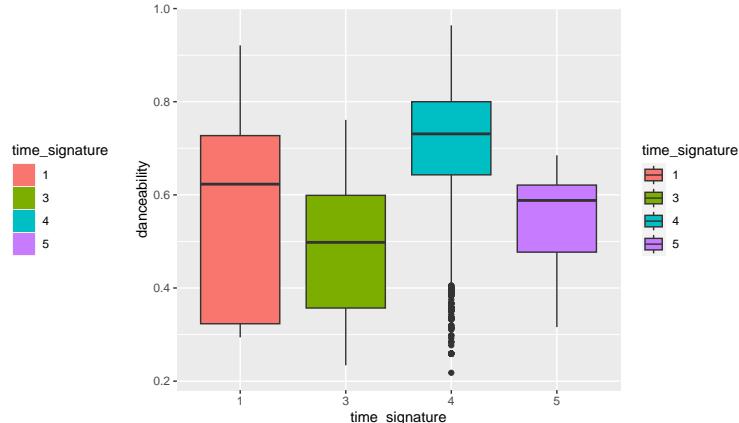
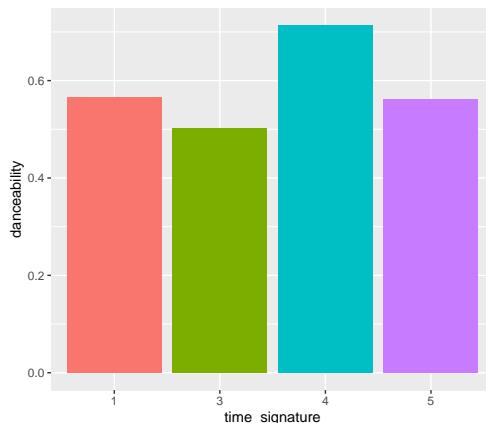
group: 5

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	85	0.11	0.11	0.07	0.09	0.03	0.01	0.88	0.86	4.22	23.51	0.01

group: Unknown

NULL

[1] "danceability and album\_type"



Descriptive statistics by group

group: 1

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	30	0.57	0.21	0.62	0.56	0.2	0.29	0.92	0.63	-0.11	-1.42	0.04

group: 3

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	185	0.5	0.14	0.5	0.5	0.15	0.23	0.76	0.53	-0.16	-0.86	0.01

group: 4

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	8535	0.71	0.12	0.73	0.72	0.11	0.22	0.96	0.75	-0.69	0.52	0

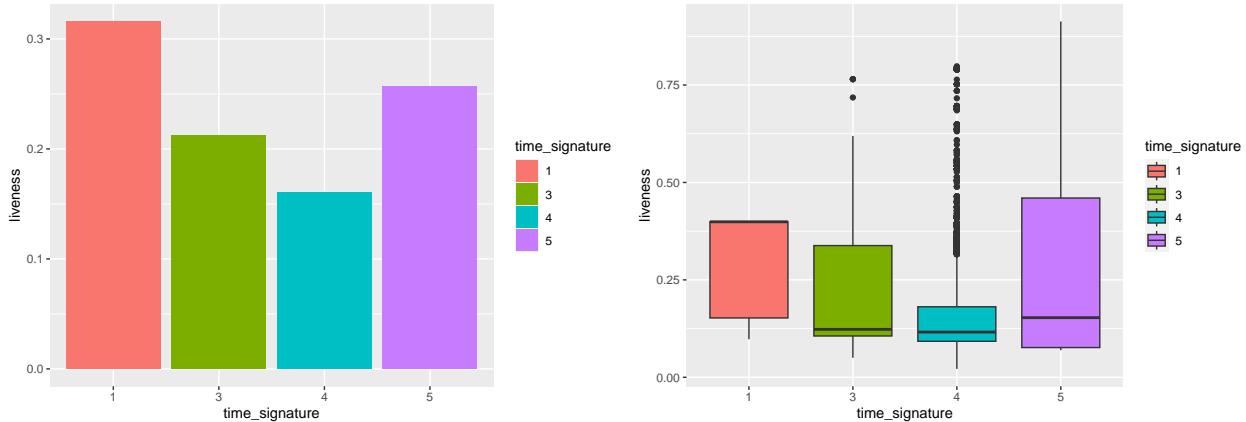
group: 5

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	85	0.56	0.07	0.59	0.57	0.05	0.32	0.69	0.37	-0.62	-0.28	0.01

```

group: Unknown
NULL
[1] "liveness and album_type"

```



#### Descriptive statistics by group

group: 1

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	30	0.32	0.13	0.4	0.33	0	0.1	0.4	0.3	-0.97	-1.06	0.02

group: 3

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	185	0.21	0.15	0.12	0.19	0.05	0.05	0.76	0.71	1.43	2.31	0.01

group: 4

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	8535	0.16	0.12	0.12	0.14	0.05	0.02	0.8	0.78	2.47	7.72	0

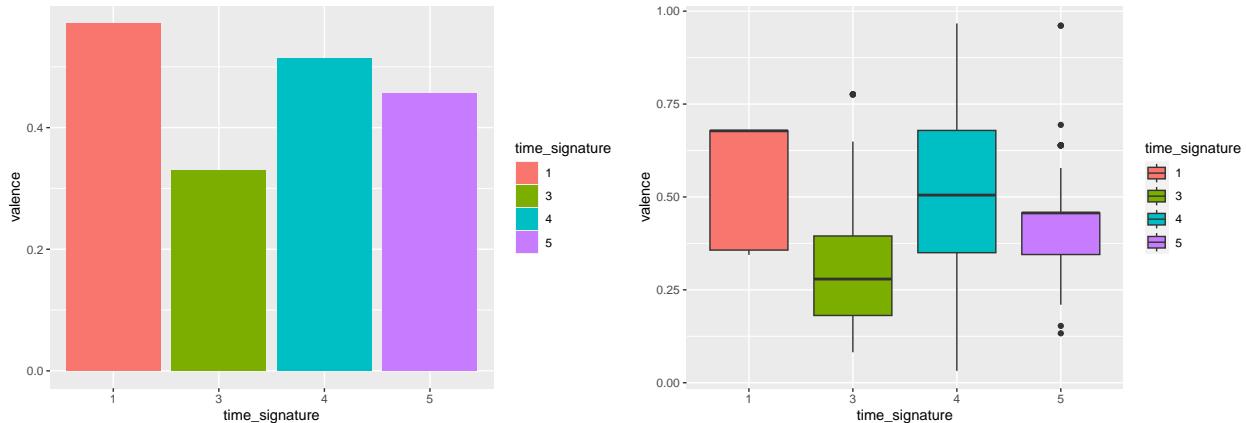
group: 5

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	85	0.26	0.19	0.15	0.25	0.11	0.07	0.91	0.84	0.56	-0.56	0.02

group: Unknown

NULL

```
[1] "valence and album_type"
```



Descriptive statistics by group

group: 1

vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se	
X1	1	30	0.57	0.15	0.68	0.59	0	0.34	0.68	0.33	-0.68	-1.59	0.03

group: 3

vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se	
X1	1	185	0.33	0.16	0.28	0.31	0.16	0.08	0.78	0.69	0.92	0.12	0.01

group: 4

vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se	
X1	1	8535	0.51	0.22	0.5	0.51	0.24	0.03	0.97	0.93	0.03	-0.74	0

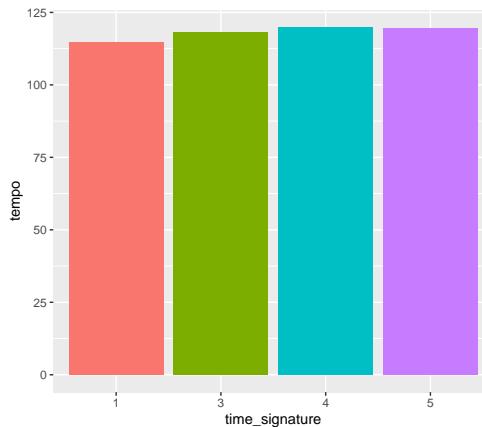
group: 5

vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se	
X1	1	85	0.46	0.14	0.46	0.45	0.17	0.13	0.96	0.83	0.9	2.55	0.02

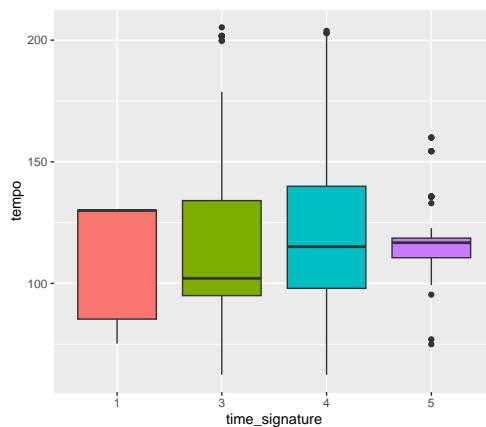
group: Unknown

NULL

[1] "tempo and album\_type"



time\_signature  
1  
3  
4  
5



time\_signature  
1  
3  
4  
5

Descriptive statistics by group

group: 1

vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	30	114.87	21.83	129.99	117.09	0	75.25	129.99	54.74	-0.7	-1.52
se												
X1	3.99											

group: 3

vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	185	117.99	37.6	102.08	113.99	20.38	62.48	205.27	142.79	0.95	-0.12
se												
X1	2.76											

group: 4

vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	8535	119.84	27.88	115.09	117.53	28.35	62.45	203.86	141.42	0.61	

```
X1      -0.43 0.3
```

---

```
group: 5
```

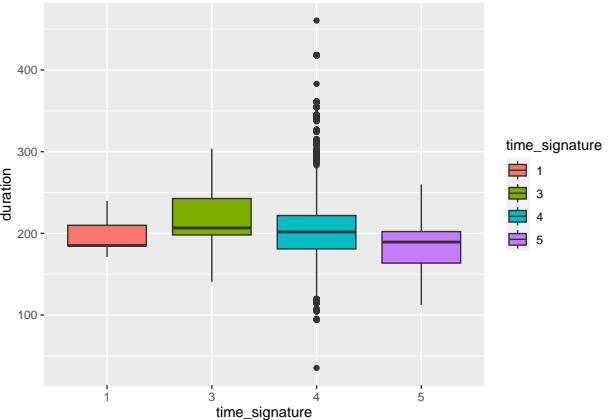
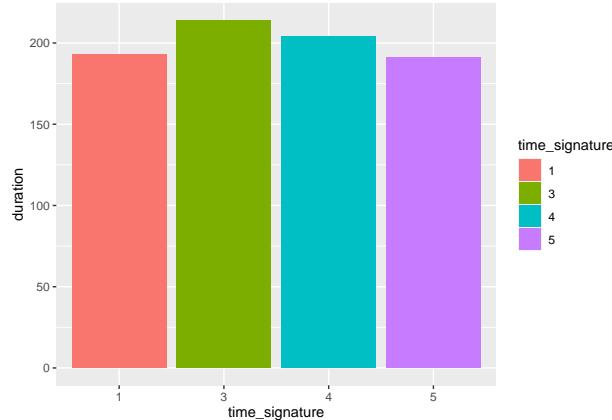
vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis
X1	1	85	119.58	15.23	116.74	118.01	9.14	74.95	159.97	85.01	0.68
			se								1.91
			X1	1.65							

---

```
group: Unknown
```

```
NULL
```

```
[1] "duration and album_type"
```



```
Descriptive statistics by group
```

```
group: 1
```

vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis
X1	1	30	193.06	14.65	185.09	191.29	0	170.96	239.95	68.99	1.28
			se								1.19
			X1	2.67							

---

```
group: 3
```

vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	185	213.82	35.65	206.64	215.03	32.38	140.69	303.64	162.95	0.01	X1
												-0.8
												2.62

---

```
group: 4
```

vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	8535	204.23	38.82	201.71	201.99	30.31	35.24	460.57	425.33	1.15	X1
												4.42
												0.42

---

```
group: 5
```

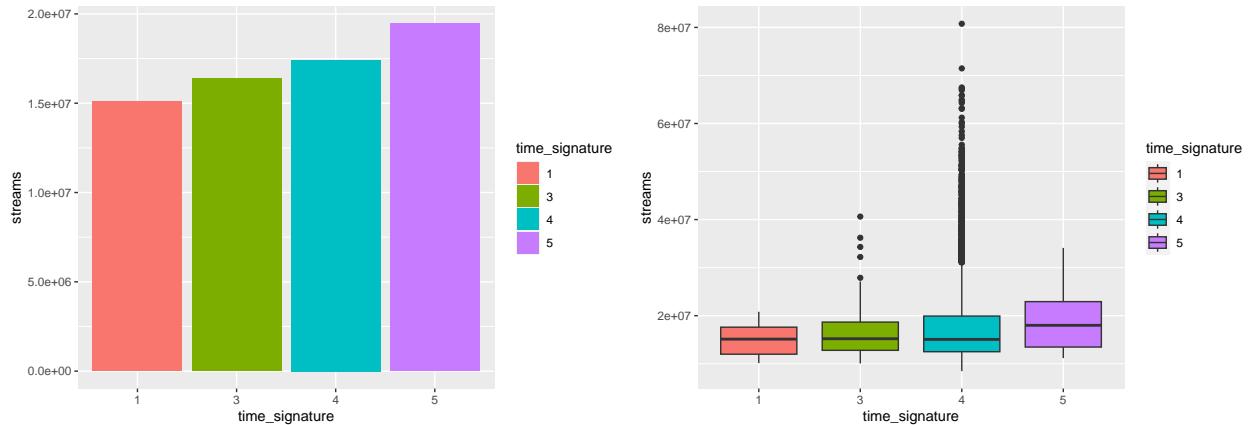
vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	85	191.34	34.28	189.36	187.57	38.14	112.24	260	147.76	0.71	-0.33
												X1
												3.72

---

```
group: Unknown
```

```
NULL
```

```
[1] "streams and album_type"
```



Descriptive statistics by group

group: 1

	vars	n	mean	sd	median	trimmed	mad	min	max
X1	1	30	15112374	3267288	15121354	15007207	4493468	10129426	20814917
			range	skew	kurtosis	se			
X1		10685491	0.21	-1.33	596522.4				

group: 3

	vars	n	mean	sd	median	trimmed	mad	min	max
X1	1	185	16376615	4985754	15200900	15714556	4261486	10056946	40628023
			range	skew	kurtosis	se			
X1		30571077	1.65	3.98	366559.9				

group: 4

	vars	n	mean	sd	median	trimmed	mad	min	max
X1	1	8535	17414150	7319134	15064252	16129974	4628731	8454914	80764045
			range	skew	kurtosis	se			
X1		72309131	2.27	7.5	79224.21				

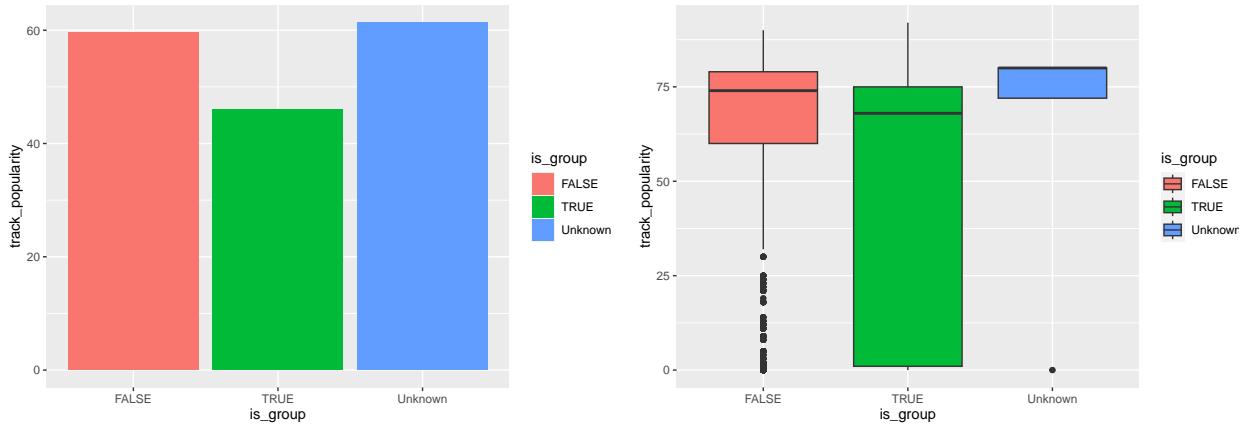
group: 5

	vars	n	mean	sd	median	trimmed	mad	min	max
X1	1	85	19449526	6658211	17996318	18824561	6794966	11167592	34104838
			range	skew	kurtosis	se			
X1		22937246	0.68	-0.69	722184.3				

group: Unknown

NULL

```
[1] "track_popularity and album_type"
```



#### Descriptive statistics by group

group: FALSE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	7916	59.56	31.06	74	63.72	10.38	0	90	90	-1.22	-0.27	0.35

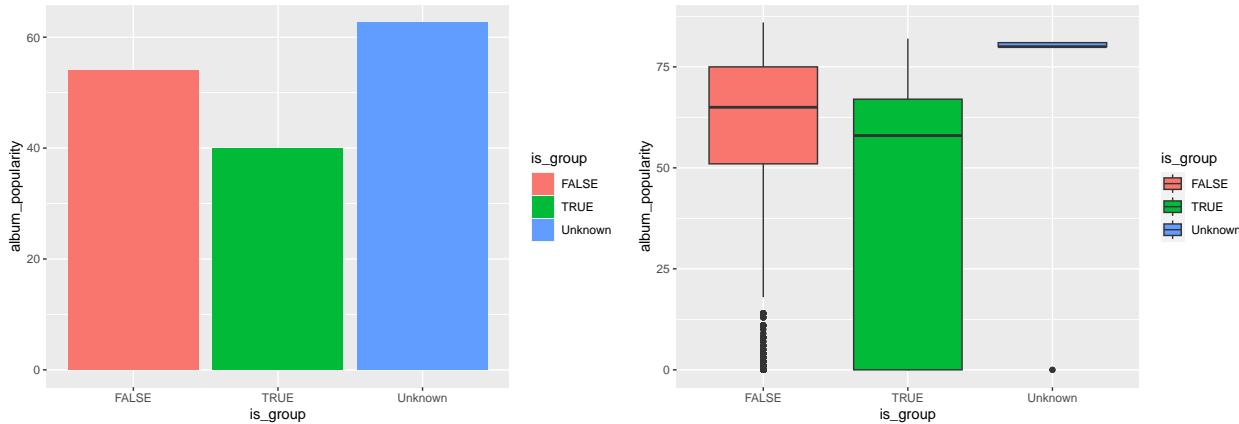
group: TRUE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	910	46	34.42	68	47.07	19.27	0	92	92	-0.39	-1.68	1.14

group: Unknown

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	9	61.33	34.87	80	61.33	0	0	80	80	-1.1	-0.82	11.62

[1] "album\_popularity and album\_type"



#### Descriptive statistics by group

group: FALSE

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	7916	54	29.58	65	57.01	16.31	0	86	86	-1.04	-0.5	0.33

group: TRUE

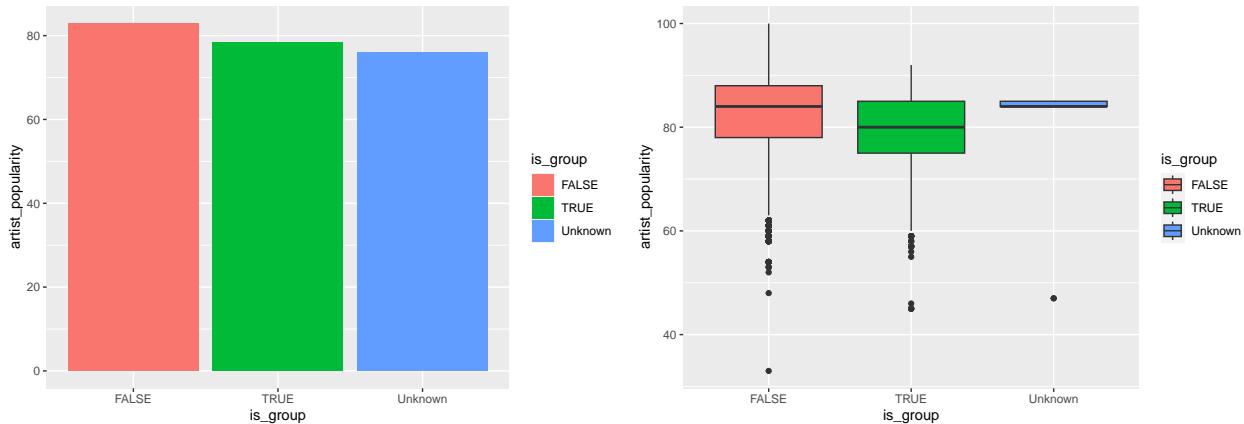
	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	910	40	31.16	58	40.67	23.72	0	82	82	-0.32	-1.72	1.03

group: Unknown

```

vars n mean sd median trimmed mad min max range skew kurtosis se
X1   1 9 62.67 35.53     80   62.67 1.48    0  81     81 -1.12      -0.8 11.84
[1] "artist_popularity and album_type"

```



Descriptive statistics by group  
group: FALSE

```

vars n mean sd median trimmed mad min max range skew kurtosis se
X1   1 7916 82.89 8.4     84   83.42 7.41   33 100     67 -0.65      0.55 0.09

```

group: TRUE

```

vars n mean sd median trimmed mad min max range skew kurtosis se
X1   1 910 78.44 8.68    80   79.11 7.41   45 92     47 -0.76      0.66 0.29

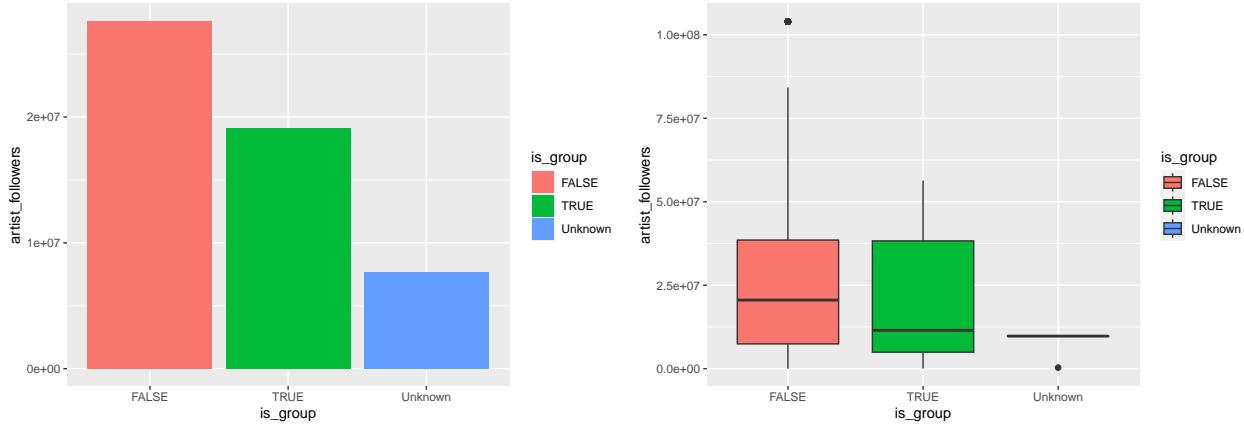
```

group: Unknown

```

vars n mean sd median trimmed mad min max range skew kurtosis se
X1   1 9 76.11 16.51    84   76.11 1.48   47 85     38 -1.12      -0.8 5.5
[1] "artist_followers and album_type"

```



Descriptive statistics by group  
group: FALSE

```

vars n mean sd median trimmed mad min max range skew kurtosis se
X1   1 7916 27608510 26122199 20554264 23835808 23343811 3805 104059839
      range skew kurtosis se
X1 104056034 1.18      0.73 293600.5

```

```

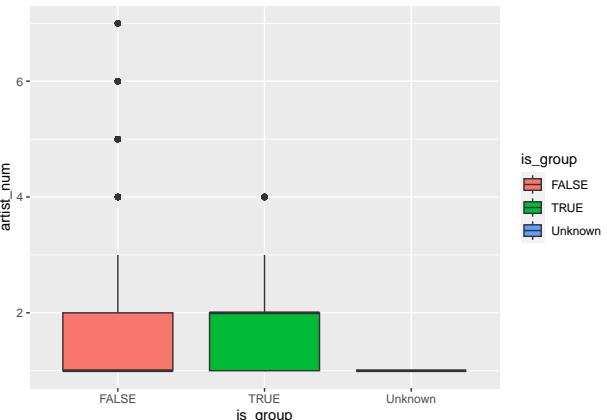
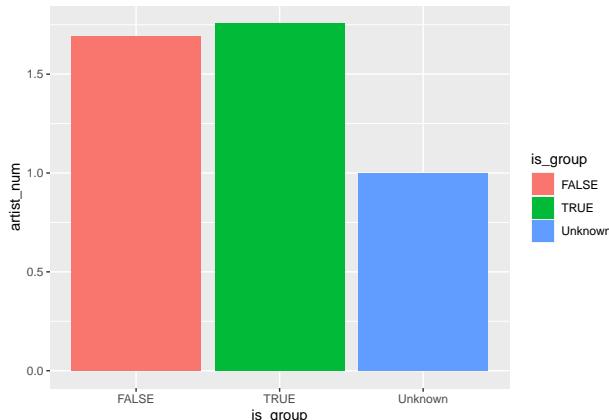
group: TRUE
  vars n      mean       sd   median trimmed     mad min      max
X1    1 910 19073764 17836956 11488092 17352331 13984746 22644 56375377
      range skew kurtosis      se
X1 56352733 0.67 -0.97 591289.3

```

```

group: Unknown
  vars n      mean       sd   median trimmed     mad min      max range skew
X1    1 9 7664643 4160697 9758282 7664643 8185.43 325865 9763803 9437938 -1.12
      kurtosis      se
X1    -0.8 1386899
[1] "artist_num and album_type"

```



#### Descriptive statistics by group

```

group: FALSE
  vars n      mean       sd   median trimmed     mad min      max range skew kurtosis      se
X1    1 7916 1.69 0.91      1 1.53 0 1 7 6 1.93 5.34 0.01

```

```

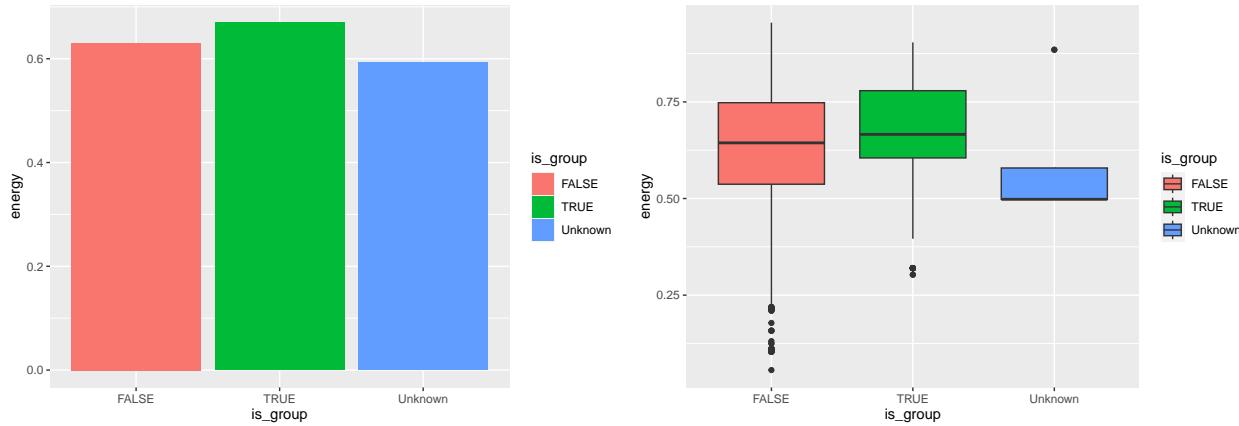
group: TRUE
  vars n      mean       sd   median trimmed     mad min      max range skew kurtosis      se
X1    1 910 1.76 0.9      2 1.61 1.48 1 4 3 1.08 0.35 0.03

```

```

group: Unknown
  vars n      mean       sd   median trimmed     mad min      max range skew kurtosis      se
X1    1 9      1 0      1 1 0 1 1 0 NaN      NaN 0
[1] "energy and album_type"

```



#### Descriptive statistics by group

group: FALSE

```
vars n mean sd median trimmed mad min max range skew kurtosis se
X1 1 7916 0.63 0.15 0.64 0.64 0.16 0.06 0.96 0.9 -0.49 -0.07 0
```

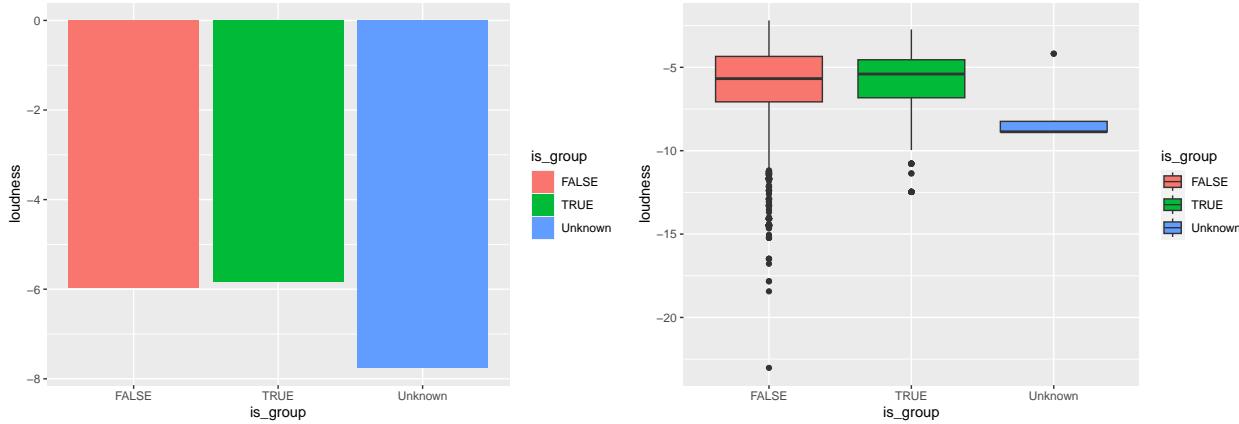
group: TRUE

```
vars n mean sd median trimmed mad min max range skew kurtosis se
X1 1 910 0.67 0.13 0.67 0.68 0.15 0.3 0.9 0.6 -0.64 -0.01 0
```

group: Unknown

```
vars n mean sd median trimmed mad min max range skew kurtosis se
X1 1 9 0.59 0.17 0.5 0.59 0 0.5 0.88 0.39 1.05 -0.89 0.06
```

[1] "loudness and album\_type"



#### Descriptive statistics by group

group: FALSE

```
vars n mean sd median trimmed mad min max range skew kurtosis se
X1 1 7916 -5.96 2.18 -5.68 -5.76 2.01 -23.02 -2.19 20.84 -1.19 2.61
X1 0.02
```

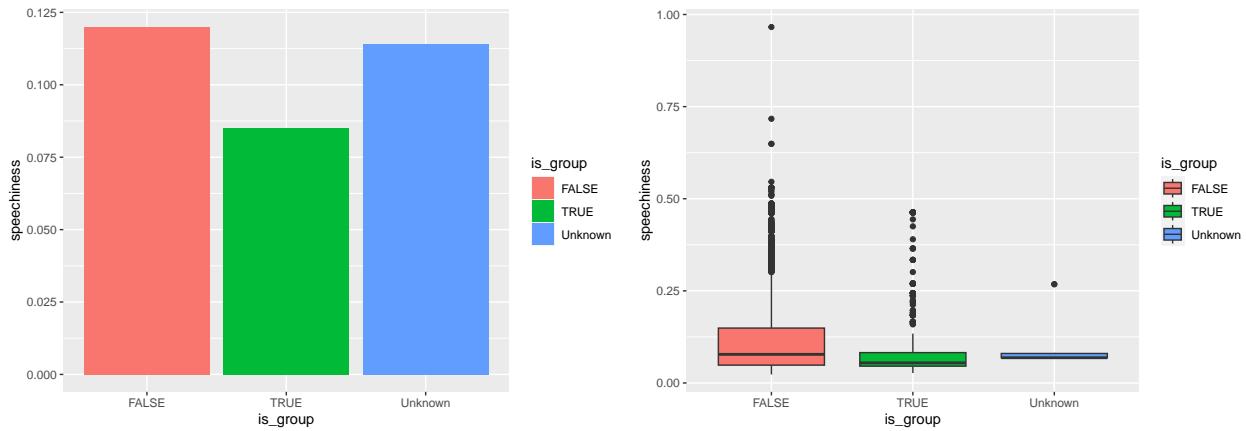
group: TRUE

```
vars n mean sd median trimmed mad min max range skew kurtosis
X1 1 910 -5.84 1.77 -5.4 -5.64 1.49 -12.47 -2.73 9.74 -1.42 3.04
```

```

      se
X1 0.06
-----
group: Unknown
  vars n  mean   sd median trimmed mad  min   max range skew kurtosis    se
X1   1 9 -7.76 2.04 -8.87   -7.76   0 -8.87 -4.18  4.68 1.09   -0.83 0.68
[1] "speechiness and album_type"

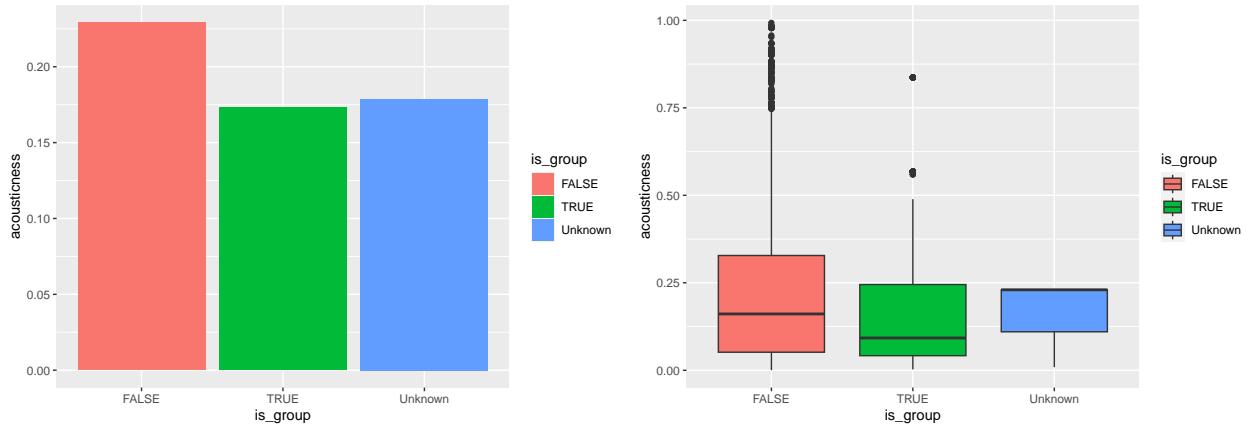
```



```

Descriptive statistics by group
group: FALSE
  vars   n  mean   sd median trimmed mad  min   max range skew kurtosis    se
X1   1 7916 0.12 0.1    0.08     0.1 0.05 0.02 0.97 0.94 1.62   2.35 0
-----
group: TRUE
  vars   n  mean   sd median trimmed mad  min   max range skew kurtosis    se
X1   1 910 0.09 0.09   0.05     0.06 0.02 0.03 0.46 0.44 3.09   9.64 0
-----
group: Unknown
  vars   n  mean   sd median trimmed mad  min   max range skew kurtosis    se
X1   1 9 0.11 0.09   0.07     0.11 0 0.07 0.27 0.2 1.11   -0.81 0.03
[1] "acousticness and album_type"

```



```

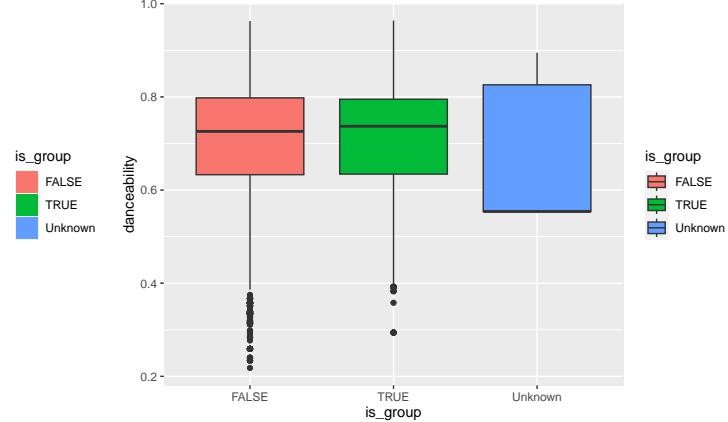
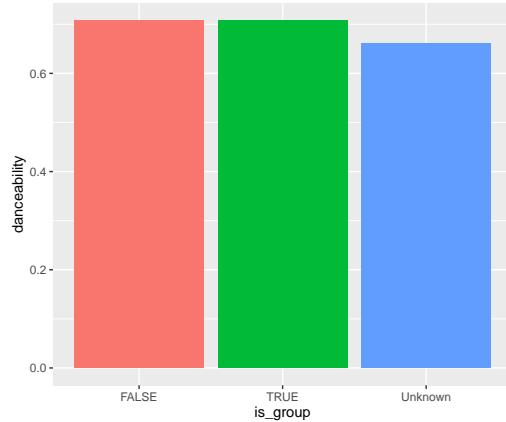
Descriptive statistics by group
group: FALSE

```

```

vars      n mean   sd median trimmed  mad min   max range skew kurtosis se
X1      1 7916 0.23 0.23    0.16    0.19 0.18    0 0.99  0.99 1.25      0.78 0
-----
group: TRUE
vars      n mean   sd median trimmed  mad min   max range skew kurtosis se
X1      1 910  0.17 0.19    0.09    0.14 0.12    0 0.84  0.83 1.74      2.84 0.01
-----
group: Unknown
vars      n mean   sd median trimmed  mad min   max range skew kurtosis se
X1      1 9  0.18 0.08    0.23    0.18 0.01  0.23  0.22 -0.95   -0.76 0.03
[1] "danceability and album_type"

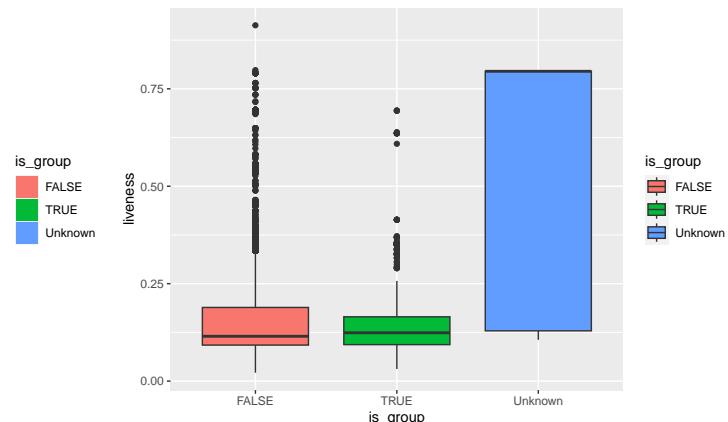
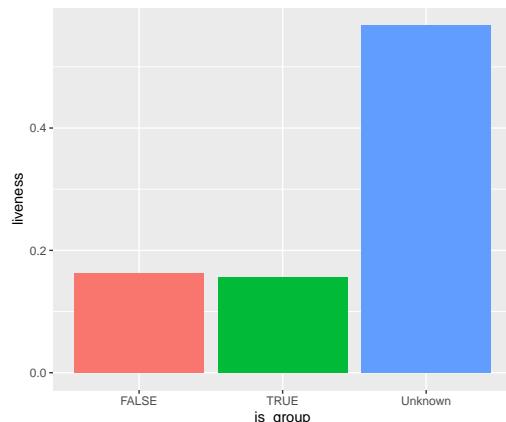
```



```

Descriptive statistics by group
group: FALSE
vars      n mean   sd median trimmed  mad min   max range skew kurtosis se
X1      1 7916 0.71 0.13    0.73    0.72 0.12 0.22 0.96  0.74   -0.71      0.53 0
-----
group: TRUE
vars      n mean   sd median trimmed  mad min   max range skew kurtosis se
X1      1 910  0.71 0.12    0.74    0.72 0.12 0.29 0.96  0.67   -0.82      0.64 0
-----
group: Unknown
vars      n mean   sd median trimmed  mad min   max range skew kurtosis se
X1      1 9  0.66 0.16    0.55    0.66 0  0.55 0.9  0.34 0.63   -1.72 0.05
[1] "liveness and album_type"

```



```
Descriptive statistics by group
```

```
group: FALSE
```

```
vars n mean sd median trimmed mad min max range skew kurtosis se
X1 1 7916 0.16 0.12 0.12 0.14 0.05 0.02 0.91 0.89 2.35 6.84 0
```

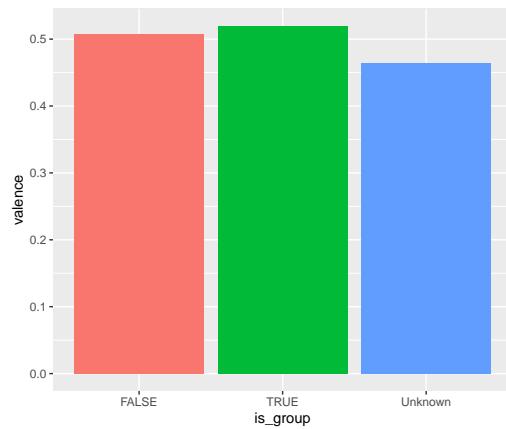
```
group: TRUE
```

```
vars n mean sd median trimmed mad min max range skew kurtosis se
X1 1 910 0.16 0.11 0.12 0.14 0.06 0.03 0.69 0.66 2.32 6.85 0
```

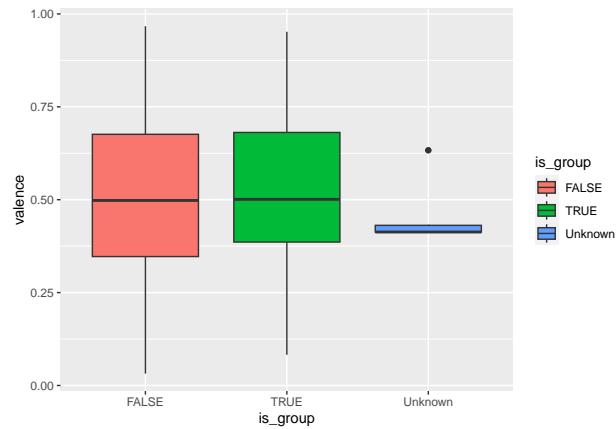
```
group: Unknown
```

```
vars n mean sd median trimmed mad min max range skew kurtosis se
X1 1 9 0.57 0.34 0.8 0.57 0 0.11 0.8 0.69 -0.59 -1.81 0.11
```

```
[1] "valence and album_type"
```



is\_group  
FALSE  
TRUE  
Unknown



is\_group  
FALSE  
TRUE  
Unknown

```
Descriptive statistics by group
```

```
group: FALSE
```

```
vars n mean sd median trimmed mad min max range skew kurtosis se
X1 1 7916 0.51 0.22 0.5 0.51 0.24 0.03 0.97 0.93 0.05 -0.78 0
```

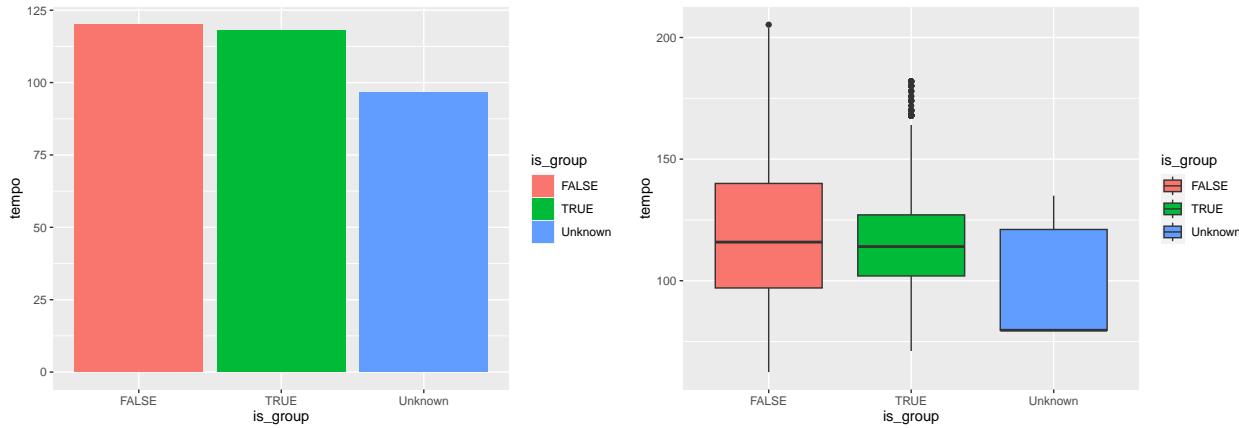
```
group: TRUE
```

```
vars n mean sd median trimmed mad min max range skew kurtosis se
X1 1 910 0.52 0.2 0.5 0.52 0.24 0.08 0.95 0.87 0.12 -0.54 0.01
```

```
group: Unknown
```

```
vars n mean sd median trimmed mad min max range skew kurtosis se
X1 1 9 0.46 0.1 0.41 0.46 0 0.41 0.63 0.22 1.11 -0.81 0.03
```

```
[1] "tempo and album_type"
```



#### Descriptive statistics by group

group: FALSE

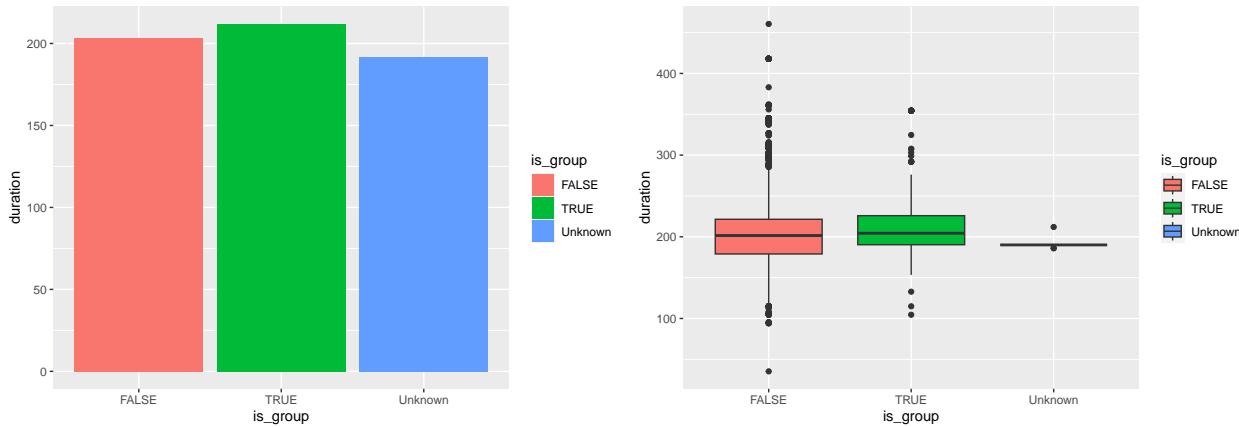
```
vars   n   mean    sd median trimmed   mad   min    max range skew kurtosis
X1     1 7916 120 28.4 115.89 117.65 29.59 62.45 205.27 142.83 0.61 -0.42
      se
X1 0.32
```

group: TRUE

```
vars   n   mean    sd median trimmed   mad   min    max range skew kurtosis
X1     1 910 118.11 24.19 114.04 115.66 19.33 71.11 181.98 110.88 0.79  0.15
      se
X1 0.8
```

group: Unknown

```
vars n   mean    sd median trimmed   mad   min    max range skew kurtosis se
X1   1 9 96.54 25.67 79.64 96.54   0 79.64 134.97 55.34 0.65 -1.66 8.56
[1] "duration and album_type"
```



#### Descriptive statistics by group

group: FALSE

```
vars   n   mean    sd median trimmed   mad   min    max range skew kurtosis
X1     1 7916 203.4 39.11 201.55 201.17 30.83 35.24 460.57 425.33 1.12  4.3
      se
X1 0.44
```

```

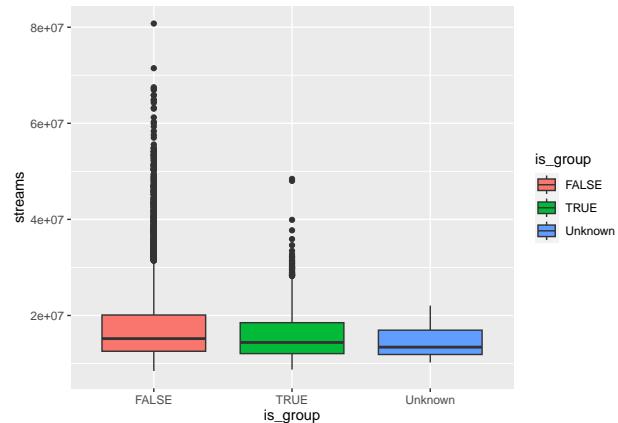
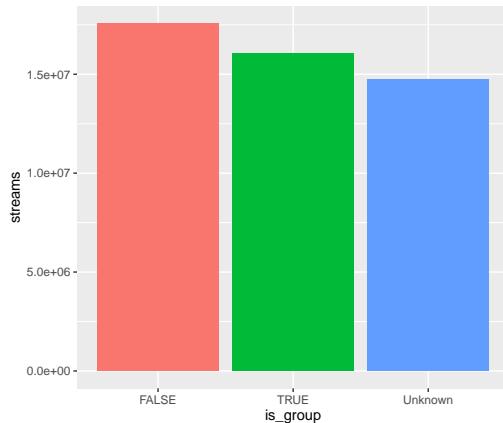
group: TRUE
  vars n   mean     sd median trimmed mad    min    max range skew kurtosis
X1    1 910 211.91 34.29 204.35 208.92 25.5 104.59 354.32 249.73 1.5      4.48
      se
X1 1.14

```

```

group: Unknown
  vars n   mean     sd median trimmed mad    min    max range skew kurtosis se
X1    1 9 191.61 7.85 190.07 191.61 0 186.03 212.01 25.99 1.87      2.13 2.62
[1] "streams and album_type"

```



#### Descriptive statistics by group

```

group: FALSE
  vars n   mean     sd median trimmed mad    min    max range skew kurtosis se
X1    1 7916 17563651 7434615 15188390 16249722 4709734 8454914 80764045
      range skew kurtosis      se
X1 72309131 2.26      7.33 83561.38

```

```

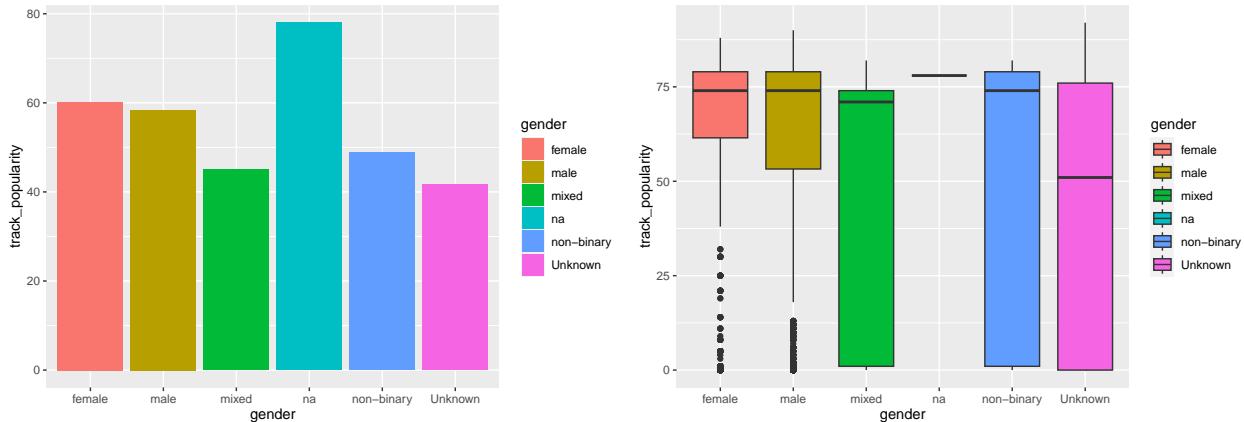
group: TRUE
  vars n   mean     sd median trimmed mad    min    max range skew kurtosis se
X1    1 910 16043257 5439876 14387181 15207080 4128573 8739078 48430814
      range skew kurtosis      se
X1 39691736 1.59      3.44 180330.1

```

```

group: Unknown
  vars n   mean     sd median trimmed mad    min    max range skew kurtosis se
X1    1 9 14755891 4207384 13409982 14755891 4715437 10216418 22055401 11838983
      range skew kurtosis      se
X1 0.52      -1.34 1402461
[1] "track_popularity and album_type"

```



#### Descriptive statistics by group

group: female

vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	1863	60.21	29.17	74	64.73	11.86	0	88	88	-1.32	0.09

group: male

vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	6514	58.39	31.94	74	62.21	10.38	0	90	90	-1.12	-0.55

group: mixed

vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	222	44.95	34.95	71	46.34	8.9	0	82	82	-0.43	-1.74

group: na

vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	8	78	0	78	78	0	78	78	0	NaN	NaN

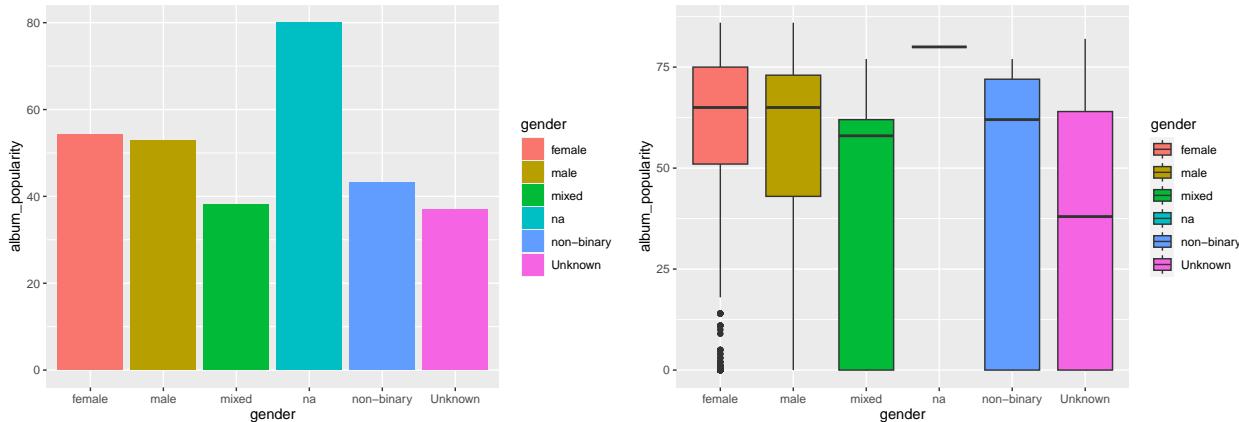
group: non-binary

vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	174	48.86	35.94	74	50.76	11.86	0	82	82	-0.51	-1.67

group: Unknown

vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	54	41.74	37.09	51	41.59	43	0	92	92	-0.16	-1.88

[1] "album\_popularity and album\_type"



#### Descriptive statistics by group

group: female

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	1863	54.25	28.07	65	57.49	17.79	0	86	86	-1.08	-0.29	0.65

group: male

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	6514	52.92	30.29	65	55.65	16.31	0	86	86	-0.95	-0.72	0.38

group: mixed

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	222	38.15	29.94	58	38.88	11.86	0	77	77	-0.44	-1.71	2.01

group: na

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	8	80	0	80	80	0	80	80	0	NaN	NaN	0

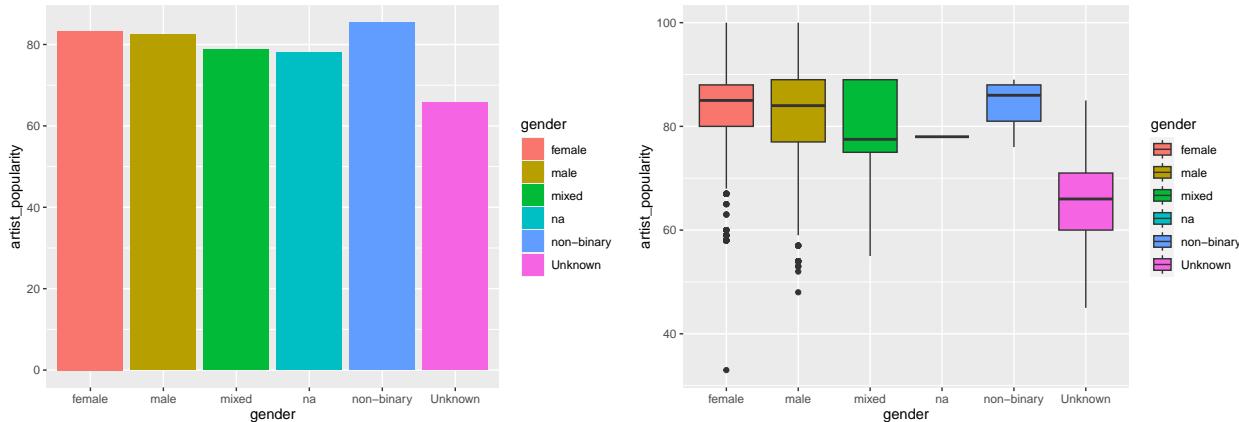
group: non-binary

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	174	43.29	33.09	62	44.45	22.24	0	77	77	-0.45	-1.67	2.51

group: Unknown

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	54	37	33.87	38	36.16	56.34	0	82	82	-0.04	-1.8	4.61

[1] "artist\_popularity and album\_type"



#### Descriptive statistics by group

group: female

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	1863	83.3	7.75	85	83.95	4.45	33	100	67	-0.87	2.35	0.18

group: male

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	6514	82.37	8.66	84	82.87	7.41	48	100	52	-0.54	0.08	0.11

group: mixed

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	222	78.85	8.66	77.5	79.6	14.08	55	89	34	-0.44	-0.54	0.58

group: na

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	8	78	0	78	78	0	78	78	0	NaN	NaN	0

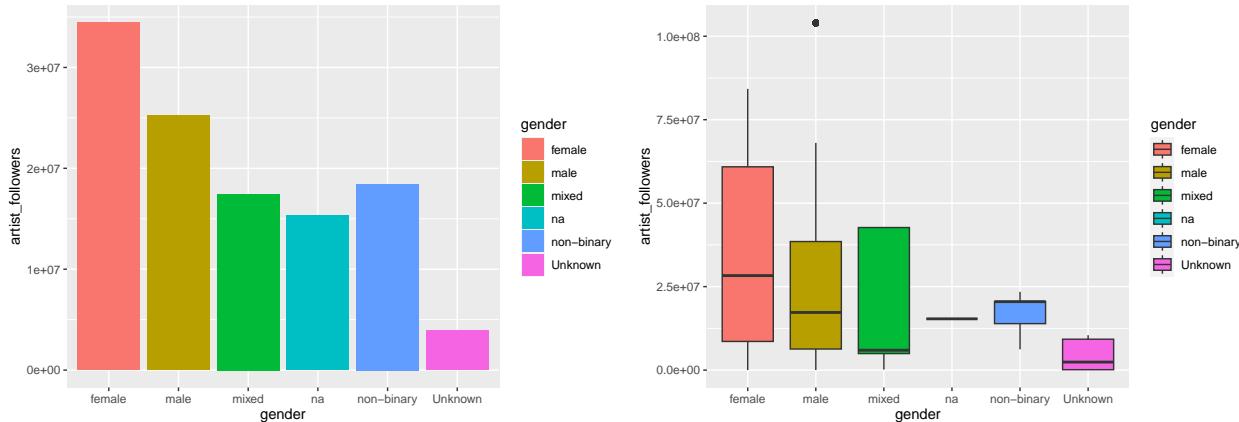
group: non-binary

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	174	85.36	3.08	86	85.49	2.97	76	89	13	-0.56	-1.01	0.23

group: Unknown

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	54	65.78	11.39	66	66	7.41	45	85	40	-0.11	-0.34	1.55

[1] "artist\_followers and album\_type"



#### Descriptive statistics by group

group: female

	vars	n	mean	sd	median	trimmed	mad	min	max
X1	1	1863	34438126	27678276	28304074	32290227	29761859	3805	84227300
			range	skew	kurtosis	se			
X1			84223495	0.62	-0.96	641257.7			

group: male

	vars	n	mean	sd	median	trimmed	mad	min	max
X1	1	6514	25237460	24983686	17259219	21363840	22255005	14787	104059839
			range	skew	kurtosis	se			
X1			104045052	1.37	1.64	309551.3			

group: mixed

	vars	n	mean	sd	median	trimmed	mad	min	max	range
X1	1	222	17456244	18172878	5956968	16354359	5782312	155010	42795797	42640787
			skew	kurtosis	se					
X1			0.65	-1.54	1219684					

group: na

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew
X1	1	8	15356994	0	15356994	15356994	0	15356994	15356994	0	Nan
			kurtosis	se							
X1			NaN	0							

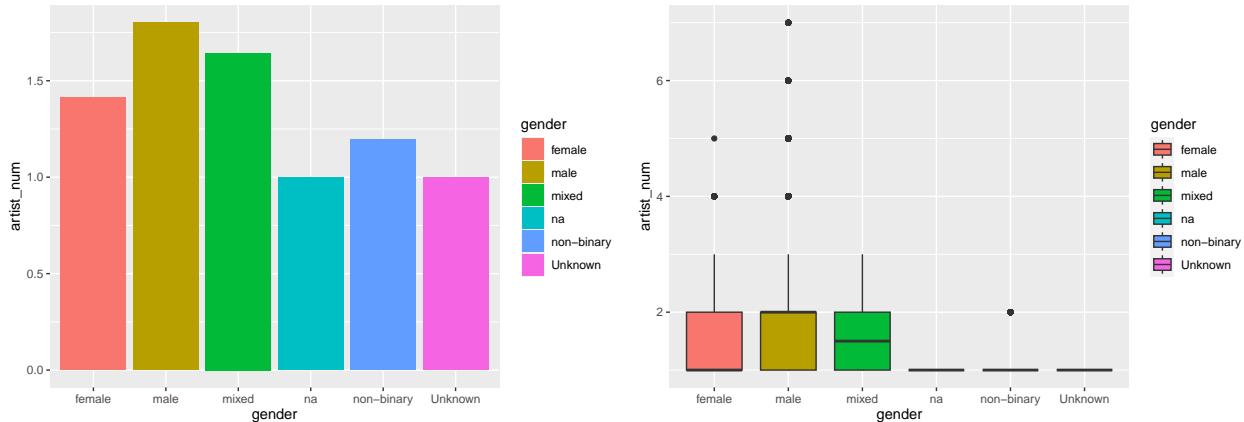
group: non-binary

	vars	n	mean	sd	median	trimmed	mad	min	max
X1	1	174	18441173	3489773	20501433	18442203	2238216	6225944	23447289
			range	skew	kurtosis	se			
X1			17221345	-0.51	-0.68	264559			

group: Unknown

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew
X1	1	54	3946825	3992051	2401044	3700200	3382113	22644	10457522	10434878	0.61
			kurtosis	se							
X1			-1.42	543249.3							

[1] "artist\_num and album\_type"



#### Descriptive statistics by group

group: female

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	1863	1.41	0.65	1	1.3	0	1	5	4	1.65	2.89	0.01

group: male

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	6514	1.8	0.96	2	1.64	1.48	1	7	6	1.74	4.23	0.01

group: mixed

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	222	1.64	0.72	1.5	1.56	0.74	1	3	2	0.64	-0.86	0.05

group: na

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	8	1	0	1	1	0	1	1	0	NaN	NaN	0

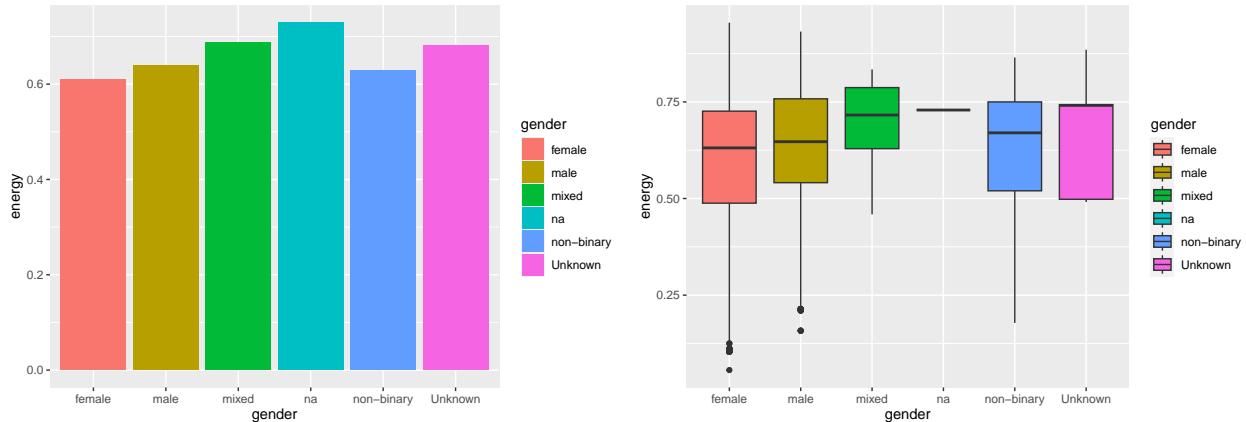
group: non-binary

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	174	1.2	0.4	1	1.12	0	1	2	1	1.52	0.32	0.03

group: Unknown

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	54	1	0	1	1	0	1	1	0	NaN	NaN	0

[1] "energy and album\_type"



#### Descriptive statistics by group

group: female

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	1863	0.61	0.17	0.63	0.62	0.17	0.06	0.96	0.9	-0.6	-0.11	0

group: male

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	6514	0.64	0.14	0.65	0.65	0.16	0.16	0.93	0.77	-0.36	-0.38	0

group: mixed

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	222	0.69	0.11	0.72	0.7	0.12	0.46	0.83	0.37	-0.58	-0.66	0.01

group: na

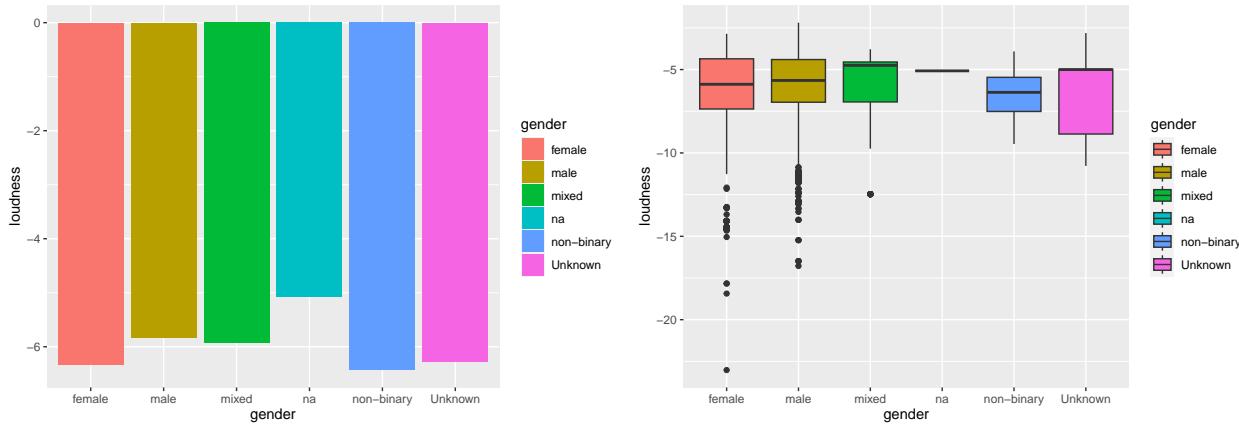
	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	8	0.73	0	0.73	0.73	0	0.73	0.73	0	NaN	NaN	0

group: non-binary

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	174	0.63	0.14	0.67	0.64	0.12	0.18	0.86	0.69	-0.78	-0.38	0.01

group: Unknown

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	54	0.68	0.13	0.74	0.68	0.14	0.49	0.88	0.39	-0.34	-1.34	0.02



#### Descriptive statistics by group

group: female

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis
X1	1	1863	-6.33	2.73	-5.88	-5.95	2.25	-23.02	-2.85	20.17	-1.41	2.23
			se									
X1		0.06										

group: male

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis
X1	1	6514	-5.83	1.93	-5.65	-5.71	1.89	-16.78	-2.19	14.59	-0.81	1.3
			se									
X1		0.02										

group: mixed

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis
X1	1	222	-5.93	2.26	-4.75	-5.41	1.01	-12.47	-3.78	8.69	-1.9	2.92
			se									
X1		0.15										

group: na

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	8	-5.08	0	-5.08	-5.08	0	-5.08	-5.08	0	Nan	Nan	0

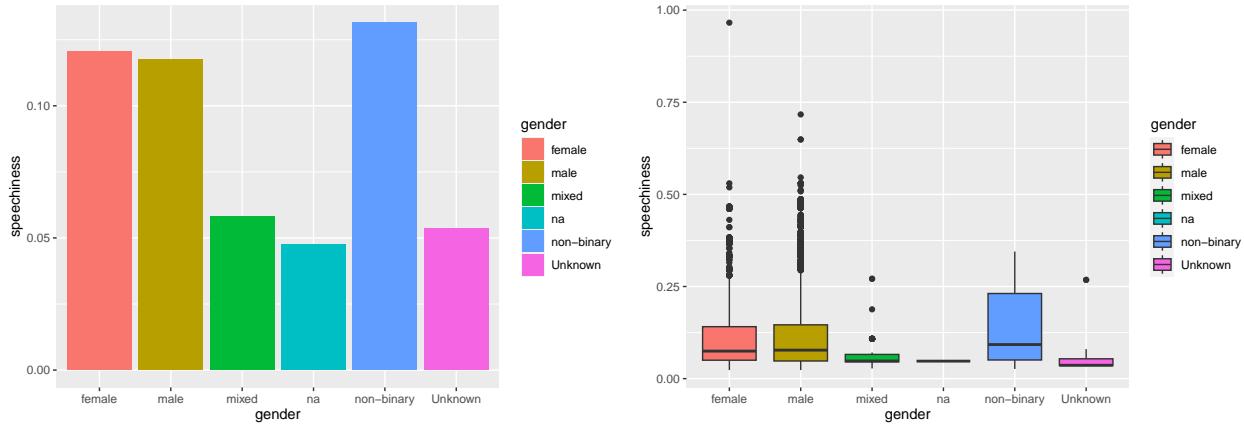
group: non-binary

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	174	-6.43	1.29	-6.37	-6.47	1.6	-9.46	-3.91	5.55	0.17	-0.63	0.1

group: Unknown

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis
X1	1	54	-6.27	2.67	-5	-6.13	2.86	-10.78	-2.81	7.97	-0.52	-1.09
			se									
X1		0.36										

[1] "speechiness and album\_type"



#### Descriptive statistics by group

group: female

```
vars   n  mean   sd median trimmed  mad  min  max range skew kurtosis se
X1     1 1863 0.12 0.11    0.07      0.1 0.04 0.02 0.97 0.94 1.73     2.99  0
```

group: male

```
vars   n  mean   sd median trimmed  mad  min  max range skew kurtosis se
X1     1 6514 0.12 0.1    0.08      0.1 0.05 0.02 0.72 0.69 1.67     2.39  0
```

group: mixed

```
vars   n  mean   sd median trimmed  mad  min  max range skew kurtosis se
X1     1 222 0.06 0.03    0.05      0.05 0.01 0.03 0.27 0.24 3.81    21.22  0
```

group: na

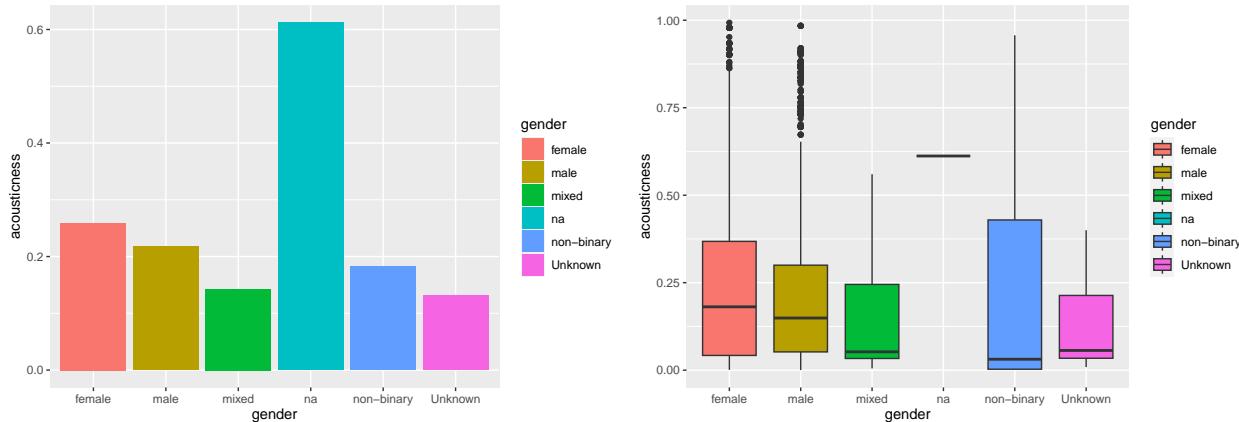
```
vars n  mean   sd median trimmed  mad  min  max range skew kurtosis se
X1   1  8 0.05  0    0.05      0.05 0 0.05 0.05      0 NaN      NaN  0
```

group: non-binary

```
vars   n  mean   sd median trimmed  mad  min  max range skew kurtosis se
X1     1 174 0.13 0.09    0.09      0.13 0.08 0.03 0.34 0.32 0.38    -1.55 0.01
```

group: Unknown

```
vars   n  mean   sd median trimmed  mad  min  max range skew kurtosis se
X1     1 54 0.05 0.04    0.04      0.04 0 0.03 0.27 0.23 4.19    17.48 0.01
[1] "acousticness and album_type"
```



#### Descriptive statistics by group

group: female

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	1863	0.26	0.26	0.18	0.22	0.22	0	0.99	0.99	1.14	0.36	0.01

group: male

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se	
X1	1	6514	0.22	0.21	0.15	0.18	0.18	0.16	0	0.98	0.98	1.3	0.93	0

group: mixed

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	222	0.14	0.14	0.05	0.12	0.07	0.01	0.56	0.55	1.06	0.41	0.01

group: na

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se	
X1	1	8	0.61	0	0.61	0.61	0.61	0	0.61	0.61	0	NaN	NaN	0

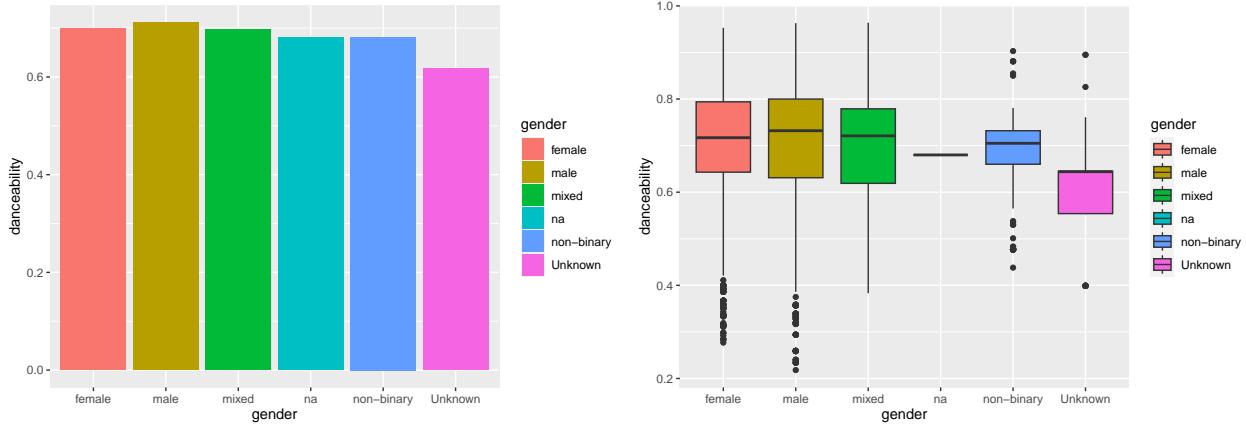
group: non-binary

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	174	0.18	0.25	0.03	0.14	0.04	0	0.96	0.96	1.19	0.01	0.02

group: Unknown

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	54	0.13	0.13	0.06	0.11	0.04	0.01	0.4	0.39	1.12	-0.2	0.02

[1] "danceability and album\_type"



#### Descriptive statistics by group

group: female

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se	
X1	1	1863	0.7	0.14	0.72	0.71	0.71	0.11	0.28	0.95	0.68	-0.89	0.61	0

group: male

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se	
X1	1	6514	0.71	0.13	0.73	0.72	0.72	0.12	0.22	0.96	0.74	-0.66	0.45	0

group: mixed

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se	
X1	1	222	0.7	0.11	0.72	0.7	0.7	0.09	0.38	0.96	0.58	-0.69	0.54	0.01

group: na

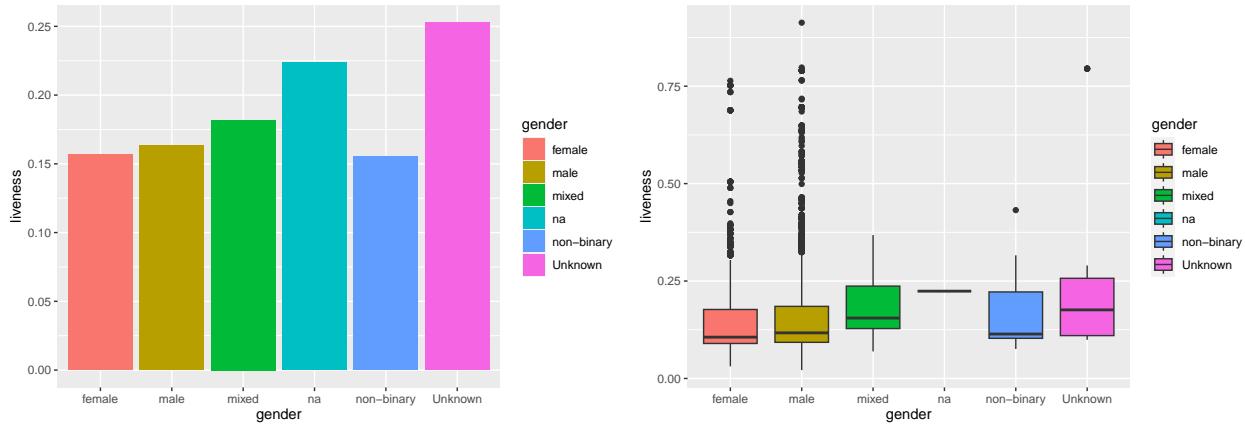
	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se	
X1	1	8	0.68	0	0.68	0.68	0.68	0	0.68	0.68	0	NaN	NaN	0

group: non-binary

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se	
X1	1	174	0.68	0.1	0.7	0.69	0.69	0.04	0.44	0.9	0.47	-0.87	0.05	0.01

group: Unknown

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se	
X1	1	54	0.62	0.13	0.64	0.62	0.62	0.07	0.4	0.9	0.5	-0.18	-0.17	0.02



#### Descriptive statistics by group

group: female

```
vars   n mean   sd median trimmed  mad min  max range skew kurtosis se
X1     1 1863 0.16 0.11    0.11    0.14 0.04 0.03 0.76 0.73 2.43    7.63  0
```

group: male

```
vars   n mean   sd median trimmed  mad min  max range skew kurtosis se
X1     1 6514 0.16 0.12    0.12    0.14 0.05 0.02 0.91 0.89 2.36    6.72  0
```

group: mixed

```
vars   n mean   sd median trimmed  mad min  max range skew kurtosis se
X1     1 222 0.18 0.09    0.16    0.17 0.09 0.07 0.37 0.3 0.89   -0.54 0.01
```

group: na

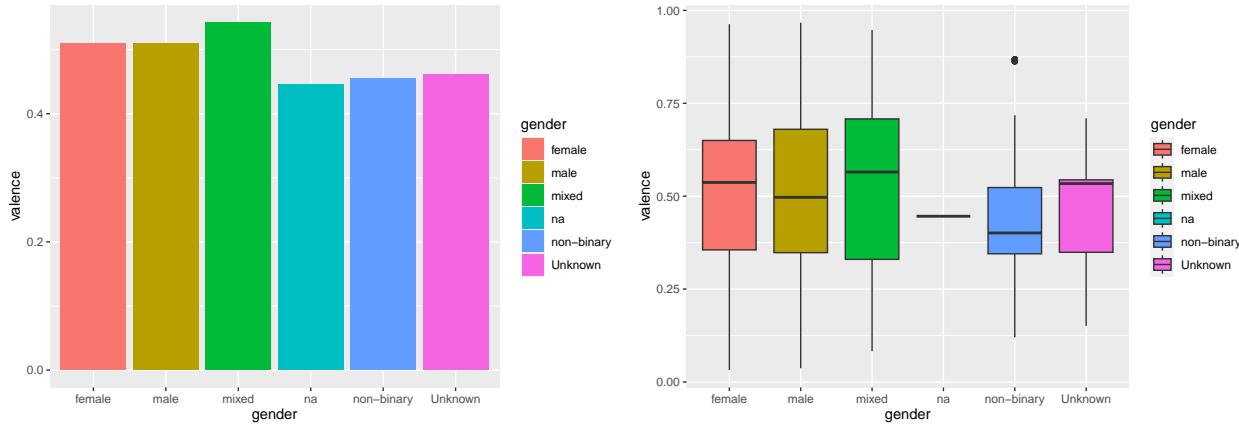
```
vars n mean sd median trimmed mad min max range skew kurtosis se
X1  1 8 0.22 0  0.22    0.22 0 0.22 0.22    0 NaN      NaN 0
```

group: non-binary

```
vars   n mean   sd median trimmed  mad min  max range skew kurtosis se
X1     1 174 0.16 0.07    0.11    0.15 0.06 0.08 0.43 0.36 0.69   -0.2 0.01
```

group: Unknown

```
vars   n mean   sd median trimmed  mad min  max range skew kurtosis se
X1     1 54 0.25 0.21    0.18    0.21 0.11 0.1 0.8  0.7 1.89    2.44 0.03
[1] "valence and album_type"
```



#### Descriptive statistics by group

group: female

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	1863	0.51	0.21	0.54	0.51	0.21	0.03	0.96	0.93	-0.12	-0.52	0

group: male

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	6514	0.51	0.22	0.5	0.51	0.24	0.04	0.97	0.93	0.07	-0.82	0

group: mixed

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	222	0.54	0.22	0.56	0.54	0.26	0.08	0.95	0.86	0.06	-0.98	0.01

group: na

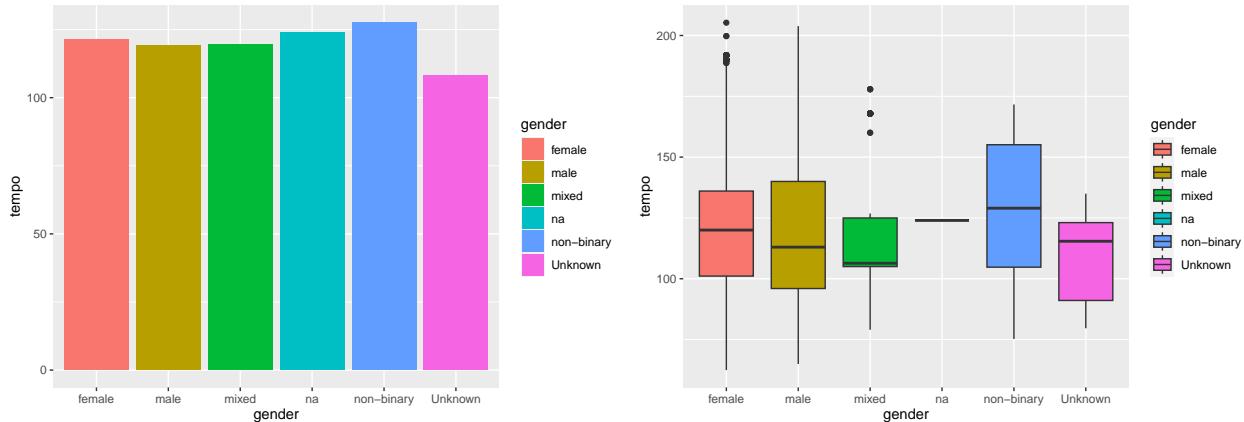
	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	8	0.45	0	0.45	0.45	0	0.45	0.45	0	NaN	NaN	0

group: non-binary

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	174	0.46	0.18	0.4	0.43	0.08	0.12	0.87	0.75	1.18	0.72	0.01

group: Unknown

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	54	0.46	0.18	0.53	0.47	0.18	0.15	0.71	0.56	-0.46	-0.74	0.02



#### Descriptive statistics by group

group: female

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew
X1	1	1863	121.38	26.42	120.01	119.55	26.61	62.45	205.27	142.83	0.58
			kurtosis	se							
X1			0.08	0.61							

group: male

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew
X1	1	6514	119.22	28.62	112.98	116.66	28.16	64.93	203.86	138.93	0.66
			kurtosis	se							
X1			-0.44	0.35							

group: mixed

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis
X1	1	222	119.48	26.19	106.38	117.32	12.76	79.03	177.91	98.89	0.93	-0.2
			se									
X1			1.76									

group: na

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	8	123.97	0	123.97	123.97	0	123.97	123.97	0	NaN	NaN	0

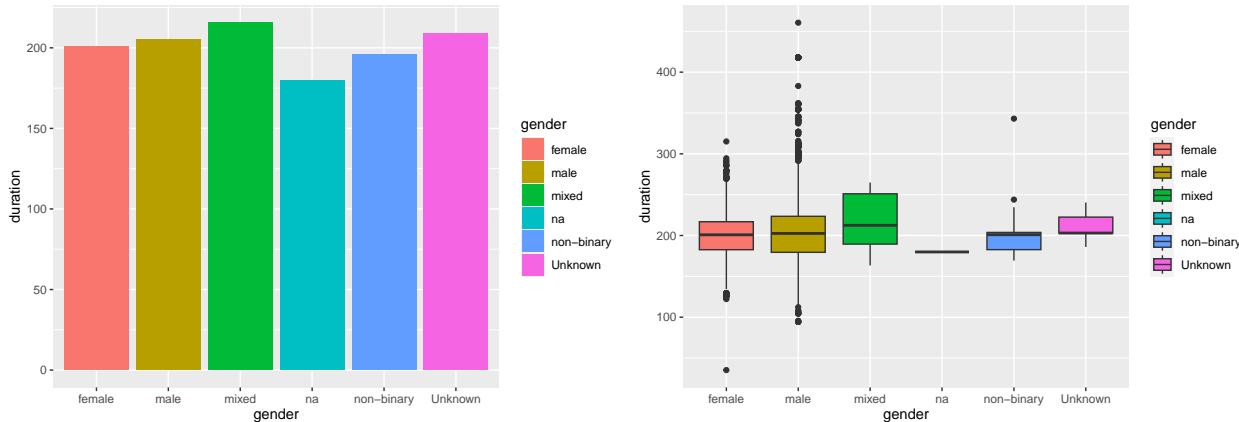
group: non-binary

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis
X1	1	174	127.54	24.26	129	128.41	38.55	75.25	171.65	96.4	-0.16	-1.44
			se									
X1			1.84									

group: Unknown

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis
X1	1	54	108.19	17.37	115.41	109.16	12.09	79.64	134.97	55.34	-0.32	-1.52
			se									
X1			2.36									

[1] "duration and album\_type"



#### Descriptive statistics by group

group: female

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew
X1	1	1863	200.91	27.03	200.89	200.16	25.29	35.24	315.15	279.91	0.14
			kurtosis	se							
X1			1.38	0.63							

group: male

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew
X1	1	6514	205.06	42.08	202.55	202.26	34.24	94.25	460.57	366.33	1.14
			kurtosis	se							
X1			3.74	0.52							

group: mixed

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis
X1	1	222	215.62	28.86	212.46	215.13	37.53	163.25	264.85	101.6	0.19	-0.97
			se									
X1			1.94									

group: na

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	8	179.87	0	179.87	179.87	0	179.87	179.87	0	NaN	NaN	0

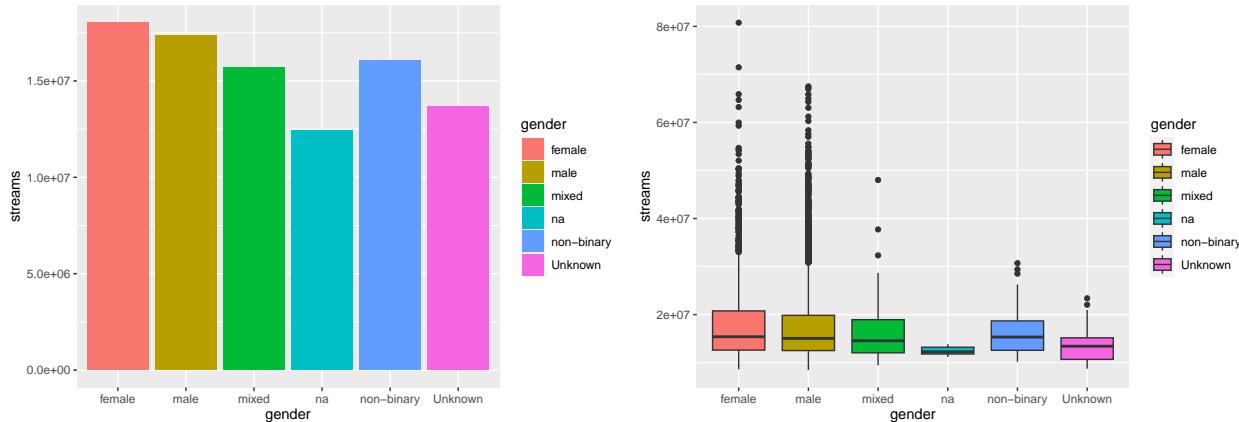
group: non-binary

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis
X1	1	174	195.77	21.05	201	193.95	27.12	169.33	343.1	173.77	2.11	12.07
			se									
X1			1.6									

group: Unknown

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis
X1	1	54	208.8	12.66	203	208.74	11.06	186.03	240.4	54.37	0.3	-0.26
			se									
X1			1.72									

[1] "streams and album\_type"



#### Descriptive statistics by group

group: female

	vars	n	mean	sd	median	trimmed	mad	min	max
X1	1	1863	18022856	8103950	15392881	16545541	4929730	8595924	80764045
			range	skew	kurtosis		se		
X1		72168121	2.33	7.67	187754.5				

group: male

	vars	n	mean	sd	median	trimmed	mad	min	max
X1	1	6514	17357834	7146211	15053708	16121101	4618009	8454914	67499798
			range	skew	kurtosis		se		
X1		59044884	2.18	6.8	88542.53				

group: mixed

	vars	n	mean	sd	median	trimmed	mad	min	max
X1	1	222	15708159	4951917	14562136	15123782	4303531	9468277	48011162
			range	skew	kurtosis		se		
X1		38542885	2.1	8.62	332350.9				

group: na

	vars	n	mean	sd	median	trimmed	mad	min	max	range
X1	1	8	12426086	965992.8	12267835	12426086	1357999	11199552	13829838	2630286
			skew	kurtosis		se				
X1		0.11	-1.7	341530						

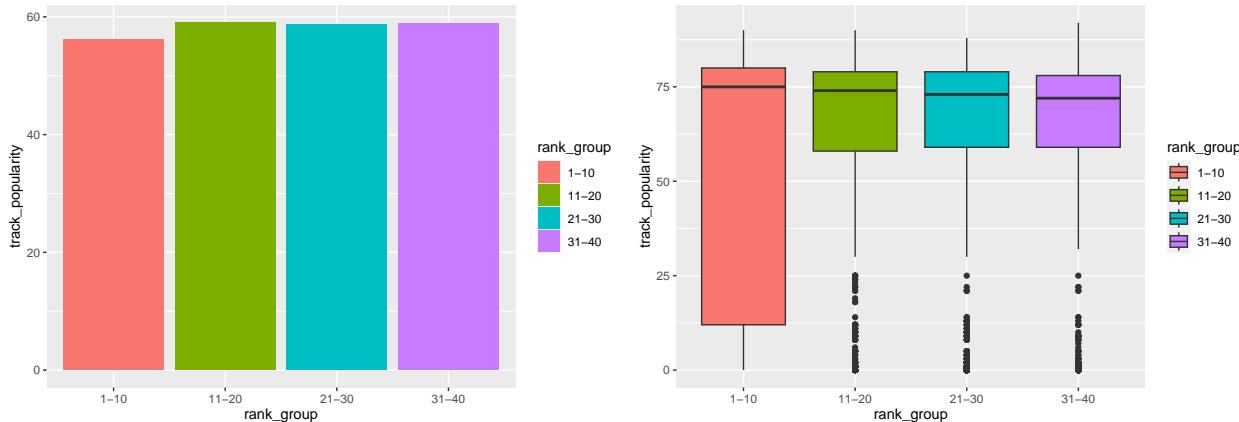
group: non-binary

	vars	n	mean	sd	median	trimmed	mad	min	max
X1	1	174	16068902	4107852	15330400	15708146	4544835	10181972	30706135
			range	skew	kurtosis		se		
X1		20524163	0.84	0.51	311415.4				

group: Unknown

	vars	n	mean	sd	median	trimmed	mad	min	max	range
X1	1	54	13664940	3402022	13416921	13294445	3829310	8739078	23392839	14653761
			skew	kurtosis		se				
X1		0.83	0.38	462956.5						

[1] "track\_popularity and album\_type"



#### Descriptive statistics by group

group: 1-10

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	2208	56.09	34.13	75	59.23	10.38	0	90	90	-0.86	-1.1	0.73

group: 11-20

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	2210	59.02	31.58	74	63.08	10.38	0	90	90	-1.17	-0.44	0.67

group: 21-30

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	2209	58.64	30.9	73	62.63	10.38	0	88	88	-1.21	-0.31	0.66

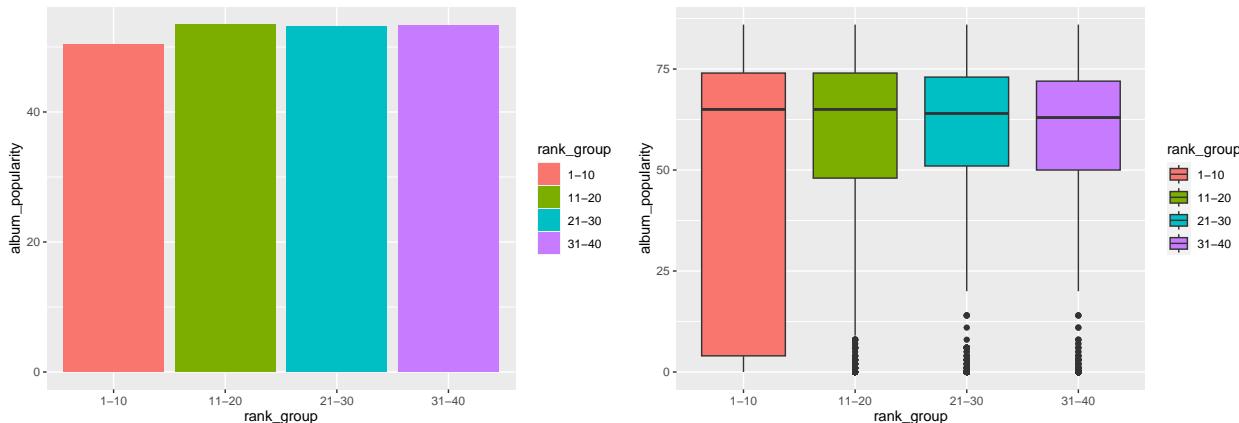
group: 31-40

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	2208	58.9	29.94	72	63.02	11.86	0	92	92	-1.28	-0.08	0.64

group: Unknown

NULL

[1] "album\_popularity and album\_type"



#### Descriptive statistics by group

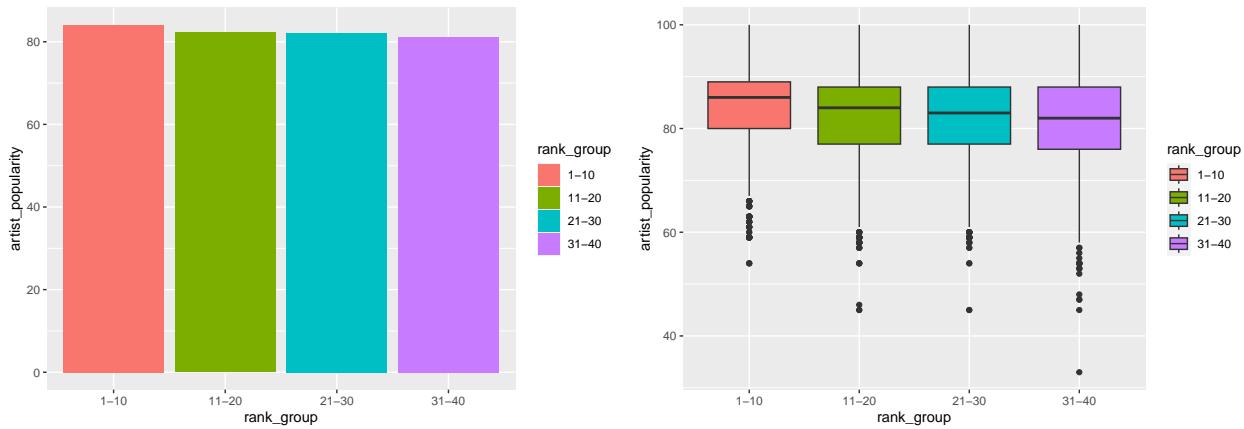
group: 1-10

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	2208	56.09	34.13	75	59.23	10.38	0	90	90	-0.86	-1.1	0.73

```

X1      1 2208 50.33 32.38      65   52.37 20.76    0   86     86 -0.72    -1.22 0.69
-----
group: 11-20
  vars   n   mean     sd median trimmed   mad min max range skew kurtosis   se
X1      1 2210 53.44 29.95      65   56.36 16.31    0   86     86 -1      -0.62 0.64
-----
group: 21-30
  vars   n   mean     sd median trimmed   mad min max range skew kurtosis   se
X1      1 2209 53.22 29.33      64   56.07 16.31    0   86     86 -1.02    -0.52 0.62
-----
group: 31-40
  vars   n   mean     sd median trimmed   mad min max range skew kurtosis   se
X1      1 2208 53.28 28.31      63   56.22 16.31    0   86     86 -1.07    -0.34 0.6
-----
group: Unknown
NULL
[1] "artist_popularity and album_type"

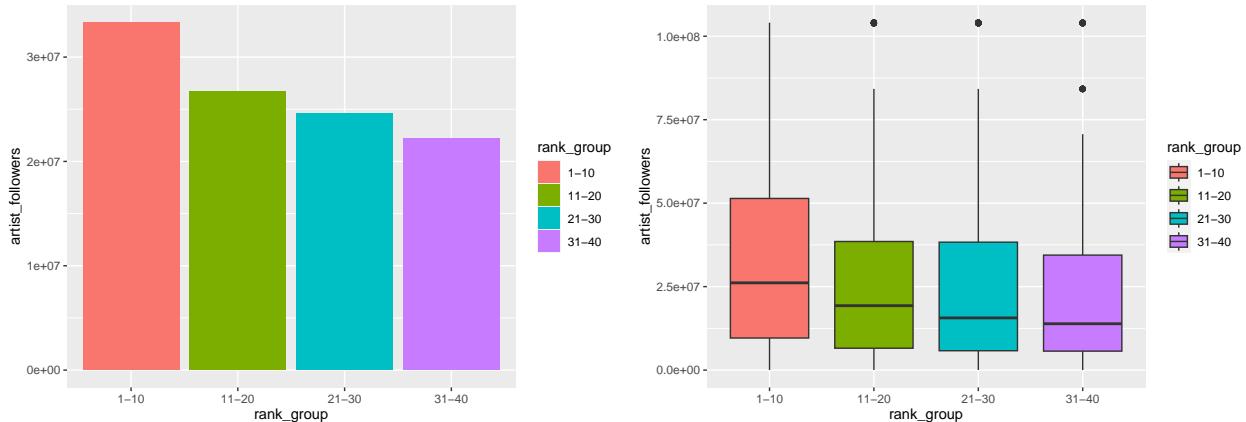
```



```

Descriptive statistics by group
group: 1-10
  vars   n   mean     sd median trimmed   mad min max range skew kurtosis   se
X1      1 2208 84.11 8.26      86   84.71 5.93   54 100      46 -0.72    0.37 0.18
-----
group: 11-20
  vars   n   mean     sd median trimmed   mad min max range skew kurtosis   se
X1      1 2210 82.26 8.66      84   82.88 7.41   45 100      55 -0.7      0.54 0.18
-----
group: 21-30
  vars   n   mean     sd median trimmed   mad min max range skew kurtosis   se
X1      1 2209 82.14 8.41      83   82.65 7.41   45 100      55 -0.56    0.43 0.18
-----
group: 31-40
  vars   n   mean     sd median trimmed   mad min max range skew kurtosis   se
X1      1 2208 81.21 8.62      82   81.82 8.9   33 100      67 -0.71    1.14 0.18
-----
group: Unknown
NULL
[1] "artist_followers and album_type"

```



#### Descriptive statistics by group

group: 1-10

	vars	n	mean	sd	median	trimmed	mad	min	max
X1	1	2208	33300151	27712077	26132019	30084641	26143043	25288	104059839
	range	skew	kurtosis	se					
X1	104034551	0.88	0.02	589752.2					

group: 11-20

	vars	n	mean	sd	median	trimmed	mad	min	max
X1	1	2210	26708719	25885133	19298271	22851976	22450637	22644	104059839
	range	skew	kurtosis	se					
X1	104037195	1.21	0.84	550622.9					

group: 21-30

	vars	n	mean	sd	median	trimmed	mad	min	max
X1	1	2209	24592795	24229168	15635815	20772286	18992331	22660	104059839
	range	skew	kurtosis	se					
X1	104037179	1.32	1.35	515514.2					

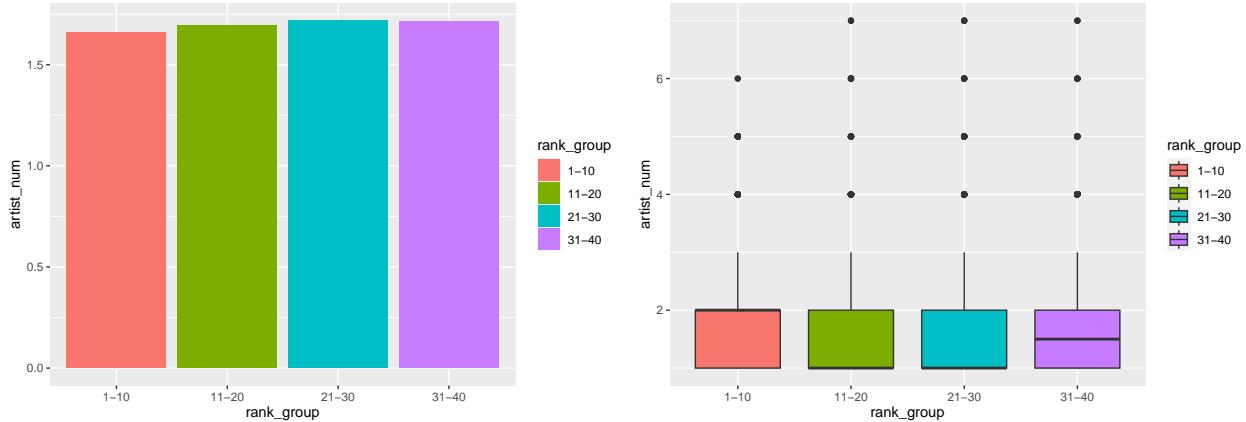
group: 31-40

	vars	n	mean	sd	median	trimmed	mad	min	max
X1	1	2208	22235774	22645610	13884321	18356705	15764186	3805	104059839
	range	skew	kurtosis	se					
X1	104056034	1.48	1.89	481930.6					

group: Unknown

NULL

[1] "artist\_num and album\_type"



#### Descriptive statistics by group

group: 1-10

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	2208	1.66	0.83	2	1.51	1.48	1	6	5	1.7	3.91	0.02

group: 11-20

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	2210	1.7	0.93	1	1.52	0	1	7	6	1.92	4.99	0.02

group: 21-30

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	2209	1.72	0.94	1	1.55	0	1	7	6	1.87	4.97	0.02

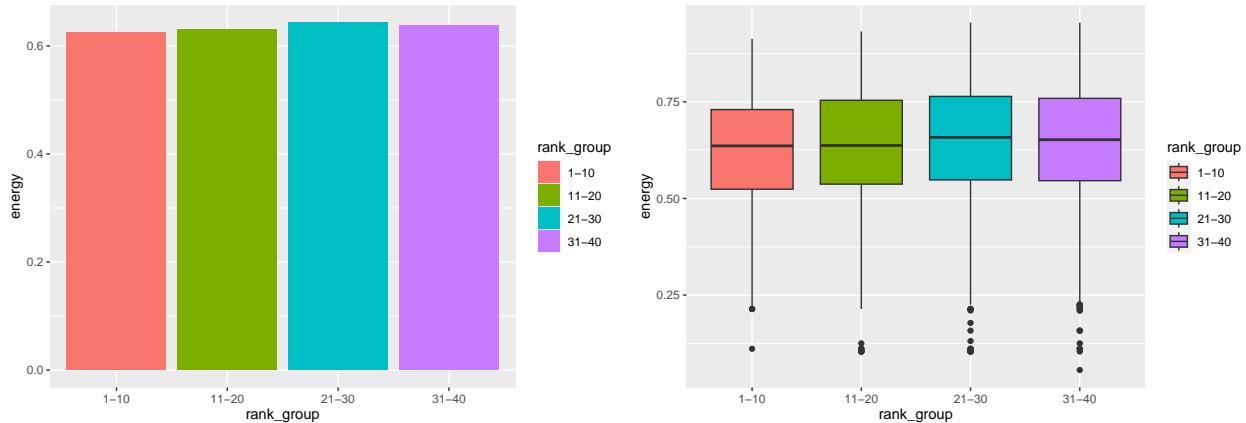
group: 31-40

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	2208	1.72	0.92	1.5	1.56	0.74	1	7	6	1.79	4.74	0.02

group: Unknown

NULL

[1] "energy and album\_type"



#### Descriptive statistics by group

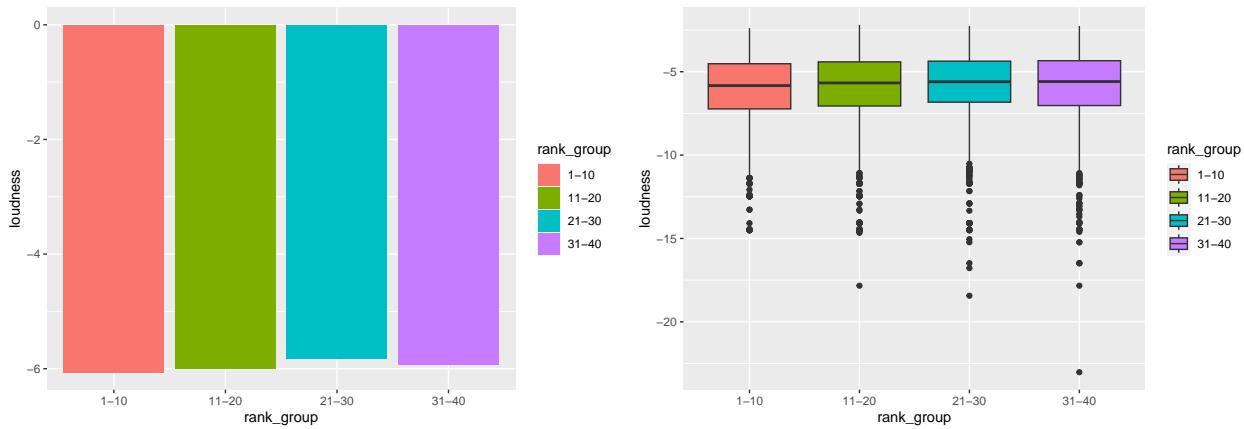
group: 1-10

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
--	------	---	------	----	--------	---------	-----	-----	-----	-------	------	----------	----

```

X1      1 2208 0.63 0.14    0.64    0.63 0.14 0.11 0.91    0.8 -0.33    -0.42  0
-----
group: 11-20
  vars   n mean   sd median trimmed mad min  max range skew kurtosis se
X1      1 2210 0.63 0.15    0.64    0.64 0.16 0.1 0.93  0.83 -0.5    -0.09  0
-----
group: 21-30
  vars   n mean   sd median trimmed mad min  max range skew kurtosis se
X1      1 2209 0.64 0.15    0.66    0.65 0.16 0.1 0.96  0.85 -0.63    0.17  0
-----
group: 31-40
  vars   n mean   sd median trimmed mad min  max range skew kurtosis se
X1      1 2208 0.64 0.15    0.65    0.65 0.16 0.06 0.96  0.9 -0.56    0.04  0
-----
group: Unknown
NULL
[1] "loudness and album_type"

```



```

Descriptive statistics by group
group: 1-10
  vars   n mean   sd median trimmed mad min  max range skew kurtosis se
X1      1 2208 -6.06 2.07    -5.83    -5.9 1.95 -14.51 -2.38 12.12 -0.91    1.31
      se
X1  0.04
-----
group: 11-20
  vars   n mean   sd median trimmed mad min  max range skew kurtosis se
X1      1 2210   -6 2.22  -5.67    -5.76 1.96 -17.83 -2.19 15.64 -1.23    2.26
      se
X1  0.05
-----
group: 21-30
  vars   n mean   sd median trimmed mad min  max range skew kurtosis se
X1      1 2209 -5.82 2.04    -5.6    -5.64 1.82 -18.43 -2.25 16.18 -1.28    3.22
      se
X1  0.04
-----
group: 31-40
  vars   n mean   sd median trimmed mad min  max range skew kurtosis

```

```

X1      1 2208 -5.93 2.21  -5.59     -5.7 1.97 -23.02 -2.25 20.77 -1.39      3.76
      se
X1  0.05

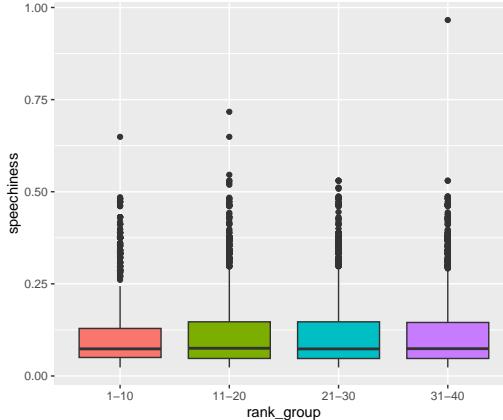
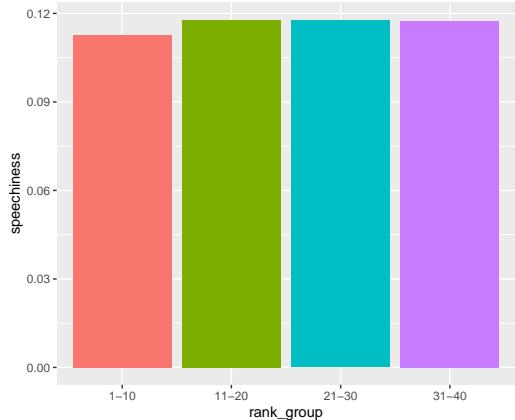
```

---

group: Unknown

NULL

[1] "speechiness and album\_type"



Descriptive statistics by group

group: 1-10

```

vars      n mean   sd median trimmed  mad   min   max range skew kurtosis se
X1      1 2208 0.11 0.1    0.07    0.09 0.04 0.02 0.65 0.63 1.83      2.76  0

```

---

group: 11-20

```

vars      n mean   sd median trimmed  mad   min   max range skew kurtosis se
X1      1 2210 0.12 0.1    0.08    0.1 0.05 0.02 0.72 0.69 1.65      2.35  0

```

---

group: 21-30

```

vars      n mean   sd median trimmed  mad   min   max range skew kurtosis se
X1      1 2209 0.12 0.1    0.07    0.1 0.05 0.02 0.53 0.51 1.59      1.91  0

```

---

group: 31-40

```

vars      n mean   sd median trimmed  mad   min   max range skew kurtosis se
X1      1 2208 0.12 0.1    0.07    0.1 0.05 0.02 0.97 0.94 1.79      3.66  0

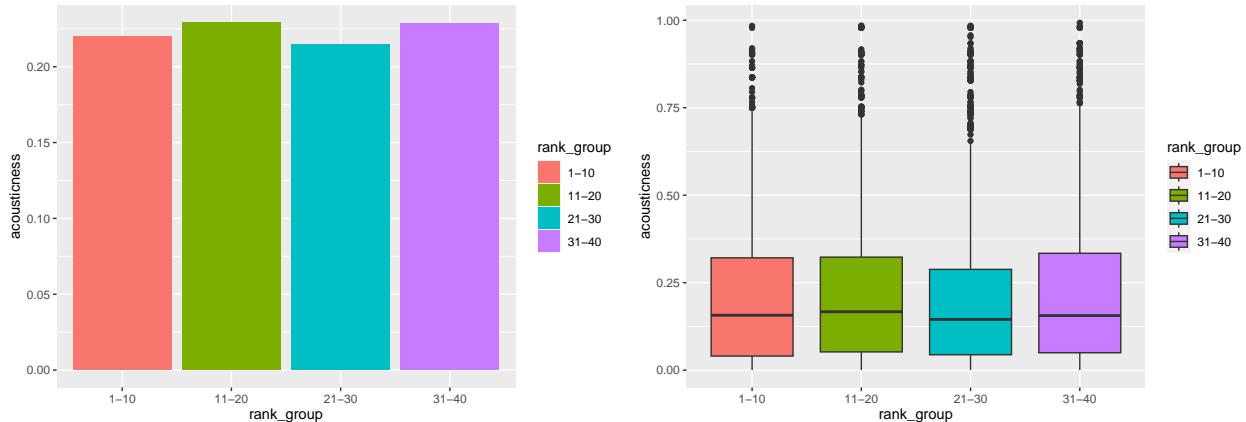
```

---

group: Unknown

NULL

[1] "acousticness and album\_type"



#### Descriptive statistics by group

group: 1-10

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	2208	0.22	0.22	0.16	0.19	0.18	0	0.98	0.98	1.2	0.53	0

group: 11-20

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	2210	0.23	0.23	0.17	0.19	0.19	0	0.98	0.98	1.28	0.93	0

group: 21-30

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	2209	0.21	0.23	0.14	0.17	0.16	0	0.98	0.98	1.45	1.4	0

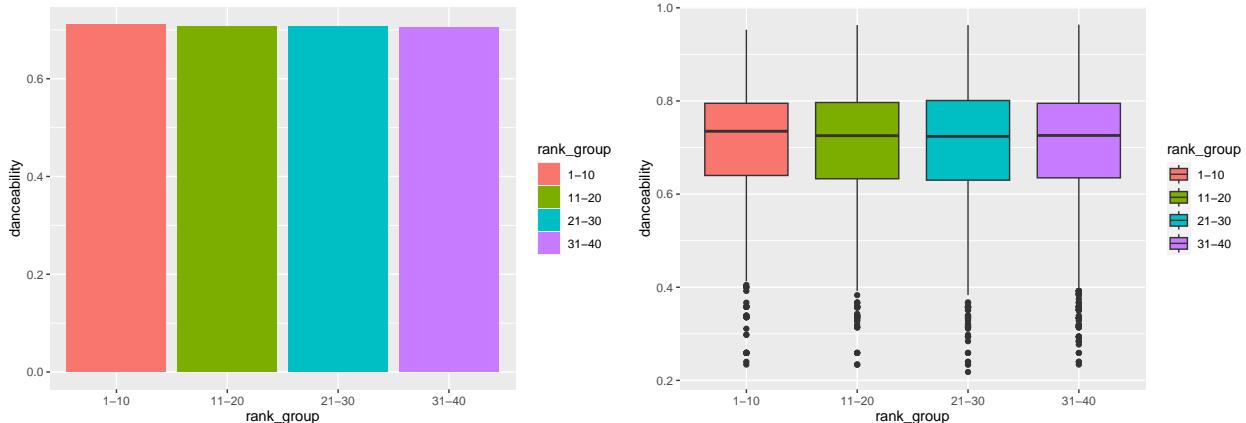
group: 31-40

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	2208	0.23	0.23	0.16	0.19	0.18	0	0.99	0.99	1.25	0.82	0

group: Unknown

NULL

[1] "danceability and album\_type"



#### Descriptive statistics by group

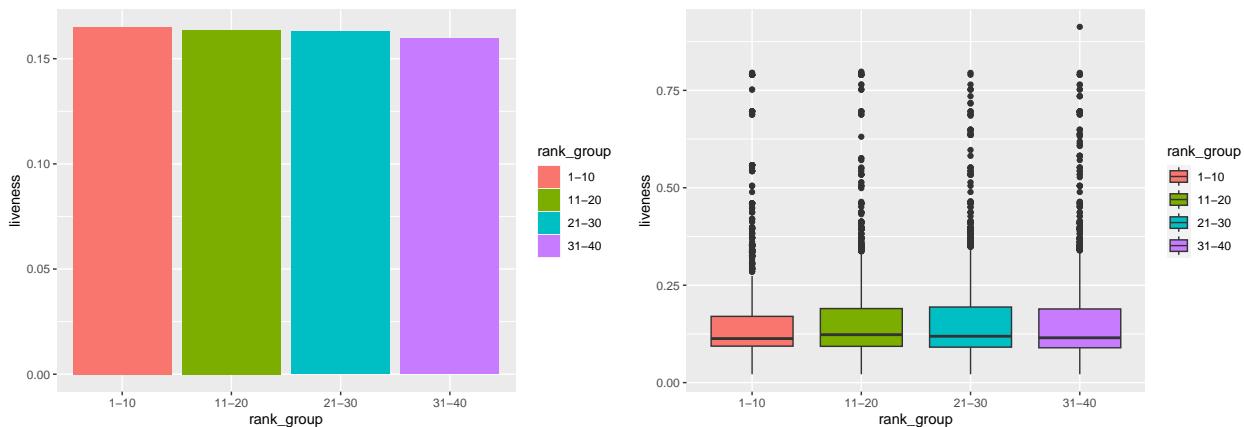
group: 1-10

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	2208	0.72	0.12	0.70	0.70	0.12	0	0.95	0.95	-0.05	1.00	0.05

```

X1      1 2208 0.71 0.12   0.74     0.72 0.11 0.23 0.95  0.72 -0.81     0.82  0
-----
group: 11-20
  vars   n mean   sd median trimmed   mad   min   max range skew kurtosis se
X1      1 2210 0.71 0.13   0.73     0.72 0.11 0.23 0.96  0.73 -0.68     0.38  0
-----
group: 21-30
  vars   n mean   sd median trimmed   mad   min   max range skew kurtosis se
X1      1 2209 0.71 0.13   0.72     0.72 0.12 0.22 0.96  0.74 -0.65     0.43  0
-----
group: 31-40
  vars   n mean   sd median trimmed   mad   min   max range skew kurtosis se
X1      1 2208 0.7 0.13   0.73     0.71 0.12 0.23 0.96  0.73 -0.74     0.5   0
-----
group: Unknown
NULL
[1] "liveness and album_type"

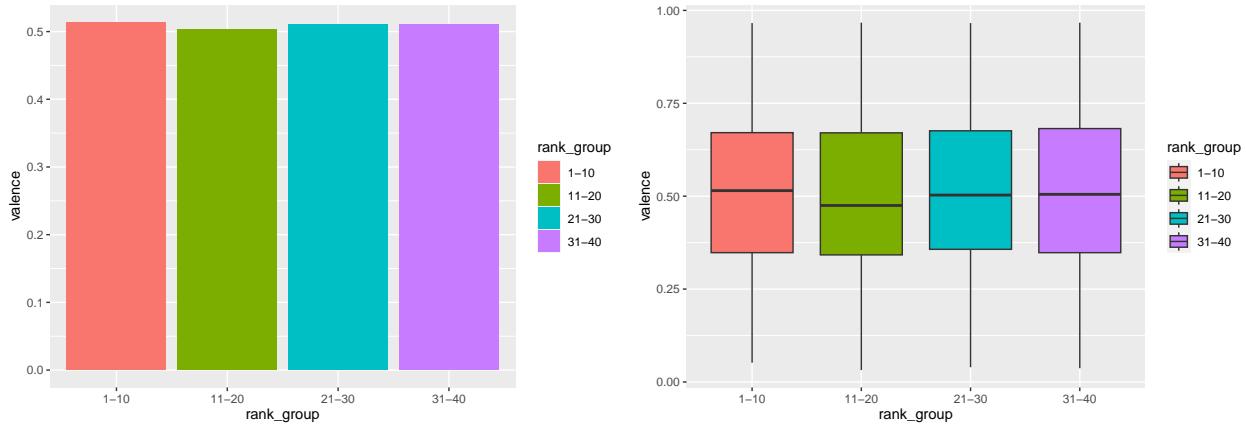
```



```

Descriptive statistics by group
group: 1-10
  vars   n mean   sd median trimmed   mad   min   max range skew kurtosis se
X1      1 2208 0.17 0.13   0.11     0.14 0.04 0.02 0.8   0.77 2.52    7.23  0
-----
group: 11-20
  vars   n mean   sd median trimmed   mad   min   max range skew kurtosis se
X1      1 2210 0.16 0.12   0.12     0.14 0.05 0.02 0.8   0.78 2.33    7.26  0
-----
group: 21-30
  vars   n mean   sd median trimmed   mad   min   max range skew kurtosis se
X1      1 2209 0.16 0.11   0.12     0.14 0.05 0.02 0.8   0.77 2.1     5.47  0
-----
group: 31-40
  vars   n mean   sd median trimmed   mad   min   max range skew kurtosis se
X1      1 2208 0.16 0.12   0.12     0.14 0.05 0.02 0.91  0.89 2.44    7.52  0
-----
group: Unknown
NULL
[1] "valence and album_type"

```



#### Descriptive statistics by group

group: 1-10

```
vars      n   mean    sd median trimmed   mad   min   max range skew kurtosis se
X1      1 2208  0.51  0.22    0.52    0.51  0.24  0.05  0.97  0.91  0.03   -0.73  0
```

group: 11-20

```
vars      n   mean    sd median trimmed   mad   min   max range skew kurtosis se
X1      1 2210  0.5  0.22    0.48    0.5  0.24  0.03  0.97  0.93  0.16   -0.76  0
```

group: 21-30

```
vars      n   mean    sd median trimmed   mad   min   max range skew kurtosis se
X1      1 2209  0.51  0.21    0.51    0.51  0.23  0.04  0.97  0.93  0.02   -0.7  0
```

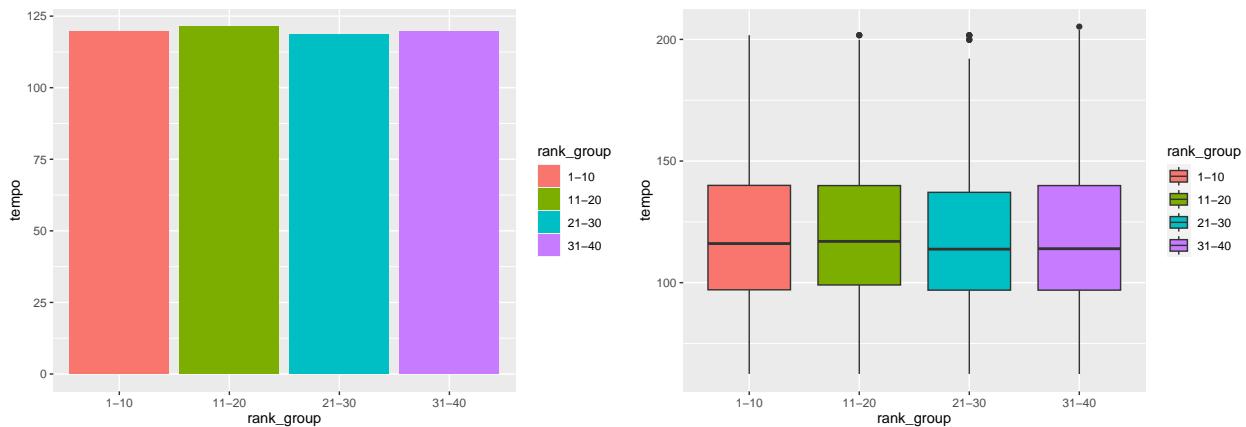
group: 31-40

```
vars      n   mean    sd median trimmed   mad   min   max range skew kurtosis se
X1      1 2208  0.51  0.22    0.51    0.51  0.25  0.04  0.97  0.93 -0.01   -0.8  0
```

group: Unknown

NULL

```
[1] "tempo and album_type"
```



#### Descriptive statistics by group

group: 1-10

```
vars      n   mean    sd median trimmed   mad   min   max range skew
```

```

X1      1 2208 119.64 27.87 116.07    117.2 29.61 62.48 201.74 139.26 0.63
      kurtosis   se
X1      -0.45 0.59
-----
```

```

group: 11-20
  vars   n   mean     sd median trimmed   mad   min   max range skew
X1      1 2210 121.34 27.54 116.97    119 28.15 62.48 201.74 139.26 0.63
      kurtosis   se
X1      -0.31 0.59
-----
```

```

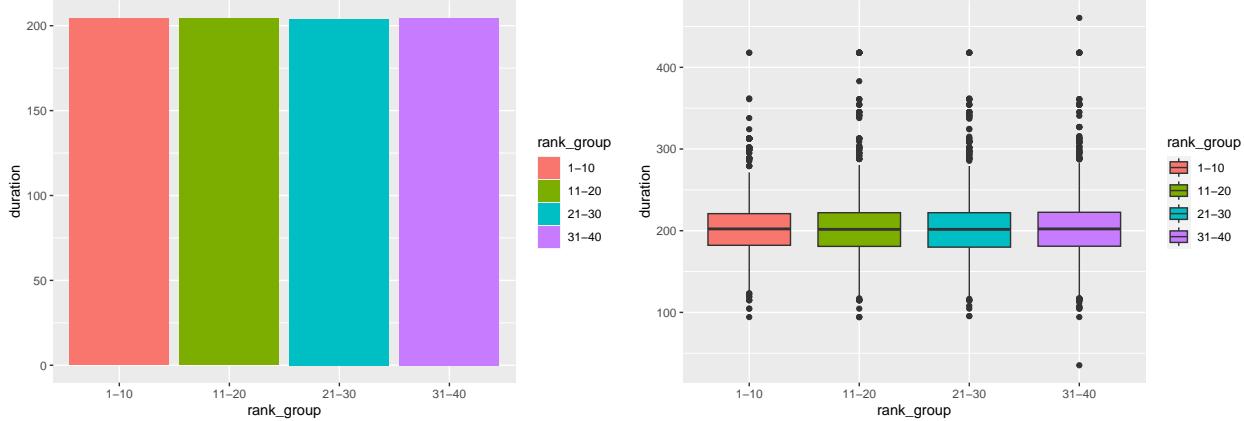
group: 21-30
  vars   n   mean     sd median trimmed   mad   min   max range skew
X1      1 2209 118.61 27.82 113.78  116.37 27.87 62.48 201.74 139.26 0.63
      kurtosis   se
X1      -0.32 0.59
-----
```

```

group: 31-40
  vars   n   mean     sd median trimmed   mad   min   max range skew
X1      1 2208 119.55 28.73 113.96  117.2 28.09 62.45 205.27 142.83 0.64
      kurtosis   se
X1      -0.38 0.61
-----
```

```

group: Unknown
NULL
[1] "duration and album_type"
```



#### Descriptive statistics by group

```
group: 1-10
```

```

  vars   n   mean     sd median trimmed   mad   min   max range skew kurtosis
X1      1 2208 204.2 34.89 202.2  203.07 28.67 94.25 417.92 323.68 0.62      2.26
      se
X1 0.74
-----
```

```
group: 11-20
```

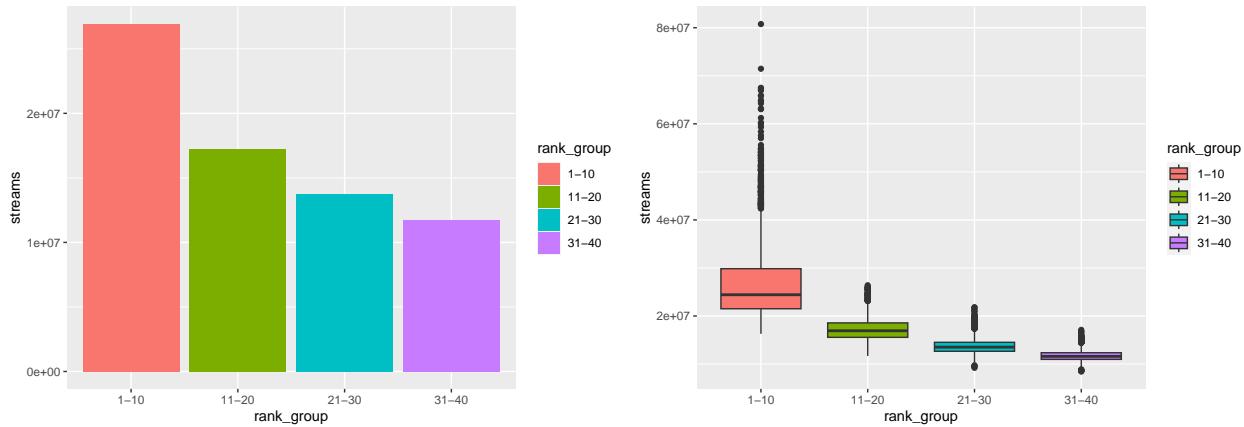
```

  vars   n   mean     sd median trimmed   mad   min   max range skew kurtosis
X1      1 2210 204.26 39.91 201.66  201.41 30.89 94.25 417.92 323.68 1.47
      se
X1  5.72 0.85
-----
```

```
group: 21-30
  vars   n   mean     sd median trimmed   mad   min   max range skew
X1    1 2209 203.99 40.14 201.66  201.21 31.12 95.47 417.92 322.45 1.15
      kurtosis   se
X1    3.63 0.85
```

```
group: 31-40
  vars   n   mean     sd median trimmed   mad   min   max range skew
X1    1 2208 204.62 39.67 202.2   202.36 30.83 35.24 460.57 425.33 1.09
      kurtosis   se
X1    4.45 0.84
```

```
group: Unknown
NULL
[1] "streams and album_type"
```



#### Descriptive statistics by group

```
group: 1-10
  vars   n   mean     sd median trimmed   mad   min   max range skew kurtosis   se
X1    1 2208 26917113 8126039 24425962 25579418 5454305 16287395 80764045
      range skew kurtosis   se
X1 64476650 1.87      4.61 172933.6
```

```
group: 11-20
  vars   n   mean     sd median trimmed   mad   min   max range skew kurtosis   se
X1    1 2210 17241329 2308844 16926869 17072377 2178054 11678776 26396743
      range skew kurtosis   se
X1 14717967 0.77      0.8 49113.22
```

```
group: 21-30
  vars   n   mean     sd median trimmed   mad   min   max range skew kurtosis   se
X1    1 2209 13723547 1540403 13523058 13600384 1349707 9219626 21828762
      range skew kurtosis   se
X1 12609136 1.02      2.33 32774.53
```

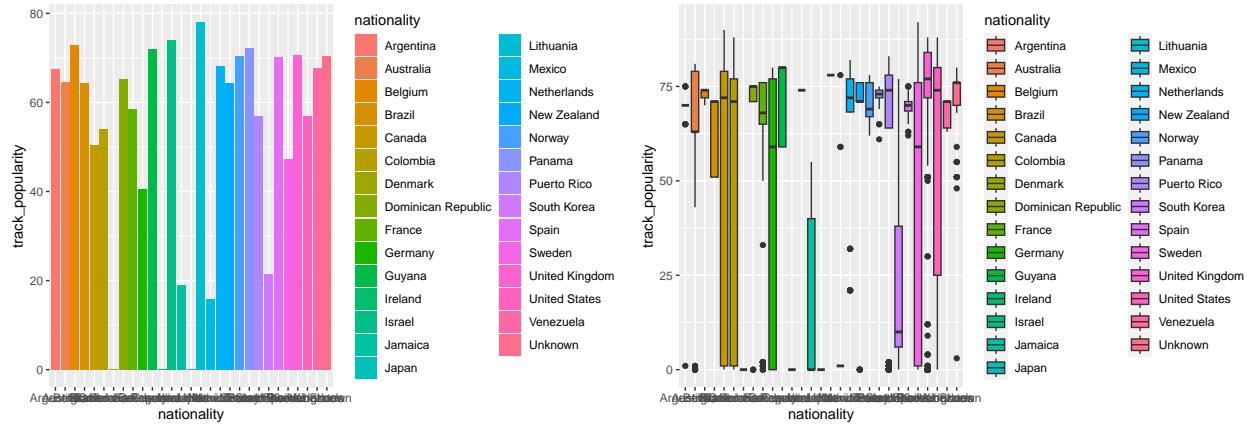
```
group: 31-40
  vars   n   mean     sd median trimmed   mad   min   max range skew kurtosis   se
X1    1 2208 11736589 1167550 11598816 11652353 1016047 8454914 17119220
      range skew kurtosis   se
```

X1 8664306 0.79 1.46 24847.12

group: Unknown

NULL

[1] "track\_popularity and album\_type"



Descriptive statistics by group

group: Argentina

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	27	67.44	13.57	70	69.78	0	1	75	74	-4.32	18.33	2.61

group: Australia

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	177	64.46	17.41	63	67.22	22.24	0	81	81	-1.95	4.75	1.31

group: Belgium

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	15	72.93	1.83	74	73.08	0	70	74	4	-0.95	-1.16	0.47

group: Brazil

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	23	64.22	9.24	71	64.89	0	51	71	20	-0.65	-1.55	1.93

group: Canada

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	775	50.49	36.56	72	51.97	16.31	0	90	90	-0.56	-1.57	1.31

group: Colombia

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	301	54.11	34.01	71	56.82	8.9	0	88	88	-0.9	-1.08	1.96

group: Denmark

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	13	0	0	0	0	0	0	NaN	NaN	0	0	0

group: Dominican Republic

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	26	65.12	24.05	75	70.14	0	0	75	75	-2.24	3.22	4.72

group: France

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	90	58.38	27.33	68	63.36	8.9	0	76	76	-1.51	0.45	2.88

---

group: Germany

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	86	40.51	36.79	59	40.74	28.17	0	80	80	-0.15	-1.92	3.97

---

group: Guyana

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	43	72.07	10.06	80	72.66	0	59	80	21	-0.48	-1.77	1.53

---

group: Ireland

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	14	0	0	0	0	0	0	0	NaN	NaN	0	

---

group: Israel

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	19	74	0	74	74	0	74	74	0	NaN	NaN	0

---

group: Jamaica

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	26	19.04	21.17	0	18.18	0	0	55	55	0.21	-1.92	4.15

---

group: Japan

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	9	0	0	0	0	0	0	0	NaN	NaN	0	

---

group: Lithuania

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	25	78	0	78	78	0	78	78	0	NaN	NaN	0

---

group: Mexico

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	13	15.85	28.57	1	11.55	0	1	78	77	1.21	-0.42	7.92

---

group: Netherlands

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	94	68.13	17.05	72	71.78	5.93	21	82	61	-1.96	2.51	1.76

---

group: New Zealand

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	47	64.28	24.97	71	69.67	7.41	0	76	76	-2.12	2.63	3.64

---

group: Norway

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	73	70.49	5.46	69	70.81	10.38	62	78	16	-0.23	-1.56	0.64

---

group: Panama

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	62	72.1	2.83	73	72.44	1.48	61	75	14	-1.47	2.64	0.36

---

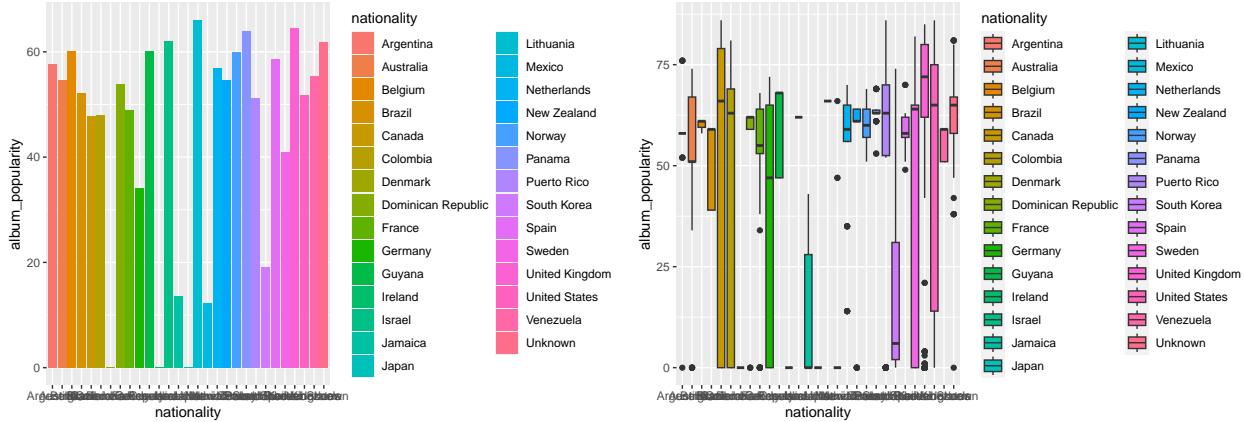
group: Puerto Rico

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
--	------	---	------	----	--------	---------	-----	-----	-----	-------	------	----------	----

```

X1      1 715 56.89 32.58      74   60.89 7.41    0  83     83 -1.12    -0.68 1.22
-----
group: South Korea
  vars n mean   sd median trimmed   mad min max range skew kurtosis   se
X1      1 89 21.55 26.26      10   18.23 10.38    0  77     77 1.11    -0.54 2.78
-----
group: Spain
  vars n mean   sd median trimmed   mad min max range skew kurtosis   se
X1      1 58 70.22 3.09      70   70.44 2.22   62  75     13 -0.52    0.16 0.41
-----
group: Sweden
  vars n mean   sd median trimmed   mad min max range skew kurtosis   se
X1      1 131 47.36 33.99      59   49.18 26.69    0  92     92 -0.57   -1.51 2.97
-----
group: United Kingdom
  vars n mean   sd median trimmed   mad min max range skew kurtosis   se
X1      1 1247 70.61 23.69      77   76.83 8.9     0  88     88 -2.32    4.2 0.67
-----
group: United States
  vars n mean   sd median trimmed   mad min max range skew kurtosis   se
X1      1 4560 56.95 32.4      74   60.66 11.86    0  88     88 -1     -0.8 0.48
-----
group: Venezuela
  vars n mean   sd median trimmed   mad min max range skew kurtosis   se
X1      1 13 67.69 3.73      71   67.82 0     63  71     8 -0.15   -2.1 1.03
-----
group: Unknown
  vars n mean   sd median trimmed   mad min max range skew kurtosis   se
X1      1 64 70.39 12.27      76   72.5 1.48     3  80     77 -3     12.08 1.53
[1] "album_popularity and album_type"

```



```

Descriptive statistics by group
group: Argentina
  vars n mean   sd median trimmed   mad min max range skew kurtosis   se
X1      1 27 57.63 13.59      58   58.78 0     0  76     76 -2.47    9.48 2.61
-----
group: Australia
  vars n mean   sd median trimmed   mad min max range skew kurtosis   se
X1      1 177 54.69 16.86      51   56.52 23.72    0  74     74 -1.17    2.07 1.27

```

-----

group: Belgium

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	15	60.2	1.37	61	60.31	0	58	61	3	-0.95	-1.16	0.35

-----

group: Brazil

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	23	52.17	9.24	59	52.84	0	39	59	20	-0.64	-1.56	1.93

-----

group: Canada

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	775	47.71	35.4	66	48.88	22.24	0	86	86	-0.49	-1.58	1.27

-----

group: Colombia

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	301	47.95	30.66	63	49.81	11.86	0	81	81	-0.81	-1.11	1.77

-----

group: Denmark

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	13	0	0	0	0	0	0	0	0	NaN	NaN	0

-----

group: Dominican Republic

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	26	53.92	19.91	62	58.09	0	0	62	62	-2.25	3.23	3.9

-----

group: France

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	90	48.98	23.71	55	52.72	13.34	0	68	68	-1.42	0.34	2.5

-----

group: Germany

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	86	34.12	31.09	47	34.23	28.91	0	72	72	-0.14	-1.91	3.35

-----

group: Guyana

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	43	60.16	10.02	68	60.77	0	47	68	21	-0.5	-1.73	1.53

-----

group: Ireland

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	14	0	0	0	0	0	0	0	0	NaN	NaN	0

-----

group: Israel

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	19	62	0	62	62	0	62	62	0	NaN	NaN	0

-----

group: Jamaica

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	26	13.5	15.15	0	12.73	0	0	43	43	0.27	-1.75	2.97

-----

group: Japan

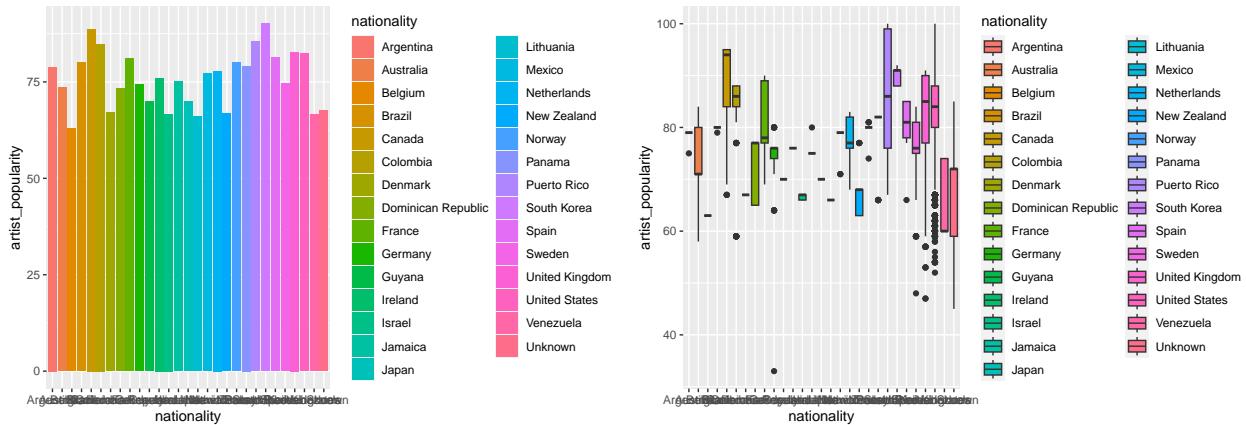
	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	9	0	0	0	0	0	0	0	0	NaN	NaN	0

-----

group: Lithuania

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	25	66	0	66	66	0	66	66	0	NaN	NaN	0
<hr/>													
group: Mexico													
	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	13	12.31	23.81	0	8.55	0	0	66	66	1.25	-0.26	6.6
<hr/>													
group: Netherlands													
	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	94	56.99	14.43	59	59.99	5.93	14	70	56	-2.01	3.27	1.49
<hr/>													
group: New Zealand													
	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	47	54.62	21.17	61	59.26	4.45	0	64	64	-2.14	2.68	3.09
<hr/>													
group: Norway													
	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	73	59.85	4.84	60	60.03	4.45	51	69	18	-0.26	-0.88	0.57
<hr/>													
group: Panama													
	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	62	63.85	3.46	63	63.9	0	53	69	16	-0.29	1.36	0.44
<hr/>													
group: Puerto Rico													
	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	715	51.22	30.45	63	53.34	10.38	0	86	86	-0.92	-0.77	1.14
<hr/>													
group: South Korea													
	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	89	19	26.83	6	15.05	7.41	0	74	74	1.26	-0.13	2.84
<hr/>													
group: Spain													
	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	58	58.69	3.98	58	58.48	2.22	49	70	21	0.79	1.69	0.52
<hr/>													
group: Sweden													
	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	131	40.98	29.69	64	42.4	14.83	0	82	82	-0.55	-1.53	2.59
<hr/>													
group: United Kingdom													
	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	1247	64.56	22.93	72	69.76	11.86	0	85	85	-1.92	2.92	0.65
<hr/>													
group: United States													
	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	4560	51.86	31.11	65	54.48	17.79	0	86	86	-0.86	-0.96	0.46
<hr/>													
group: Venezuela													
	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	13	55.31	4.15	59	55.36	0	51	59	8	-0.14	-2.13	1.15
<hr/>													
group: Unknown													
	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	64	61.83	13.07	65	63.13	2.97	0	81	81	-1.86	6.27	1.63

[1] "artist\_popularity and album\_type"



Descriptive statistics by group

group: Argentina

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	27	78.85	0.77	79	79	0	75	79	4	-4.63	20.22	0.15

group: Australia

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	177	73.63	7.25	71	74.42	10.38	58	84	26	-0.68	-0.18	0.55

group: Belgium

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	15	63	0	63	63	0	63	63	0	NaN	NaN	0

group: Brazil

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	23	79.96	0.21	80	80	0	79	80	1	-4.19	16.26	0.04

group: Canada

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	775	88.69	7.94	94	90.09	1.48	67	95	28	-1.18	0.14	0.29

group: Colombia

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	301	84.81	5.74	86	86.06	2.97	59	88	29	-3.65	13.46	0.33

group: Denmark

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	13	67	0	67	67	0	67	67	0	NaN	NaN	0

group: Dominican Republic

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	26	73.31	5.65	77	73.73	0	65	77	12	-0.79	-1.43	1.11

group: France

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	90	81.01	6.24	78	80.82	1.48	69	90	21	0.45	-1.27	0.66

group: Germany

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	86	74.27	5.7	76	75.13	1.48	33	80	47	-4.73	29.9	0.61

---

group: Guyana

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	43	70	0	70	70	0	70	70	0	NaN	NaN	0

---

group: Ireland

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	14	76	0	76	76	0	76	76	0	NaN	NaN	0

---

group: Israel

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	19	66.68	0.48	67	66.71	0	66	67	1	-0.73	-1.54	0.11

---

group: Jamaica

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	26	75.19	0.98	75	75	0	75	80	5	4.53	19.23	0.19

---

group: Japan

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	9	70	0	70	70	0	70	70	0	NaN	NaN	0

---

group: Lithuania

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	25	66	0	66	66	0	66	66	0	NaN	NaN	0

---

group: Mexico

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	13	77.15	3.51	79	77.55	0	71	79	8	-1.13	-0.76	0.97

---

group: Netherlands

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	94	77.81	4	77	78.24	1.48	68	83	15	-0.71	0.57	0.41

---

group: New Zealand

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	47	66.81	4.59	68	66.15	7.41	63	77	14	1.14	0.33	0.67

---

group: Norway

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	73	79.96	0.73	80	80	0	74	81	7	-7.19	56.41	0.09

---

group: Panama

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	62	79.16	6.16	82	80.4	0	66	82	16	-1.65	0.73	0.78

---

group: Puerto Rico

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	715	85.43	9.86	86	85.57	16.31	67	100	33	0.1	-1.19	0.37

---

group: South Korea

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
--	------	---	------	----	--------	---------	-----	-----	-----	-------	------	----------	----

```
X1      1 89 90.09 1.57      91  90.11   0  88  92      4 -0.48      -1.56 0.17
```

group: Spain

vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	58	81.29	3.74	81	81.58	5.93	66	85	19	-1.18	2.62

group: Sweden

vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	131	74.63	7.29	76	75.76	7.41	48	84	36	-1.21	0.66

group: United Kingdom

vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	1247	82.78	8.11	85	83.86	7.41	47	91	44	-1.01	0.58

group: United States

vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	4560	82.42	7.59	84	83.38	5.93	52	100	48	-1.01	1.41

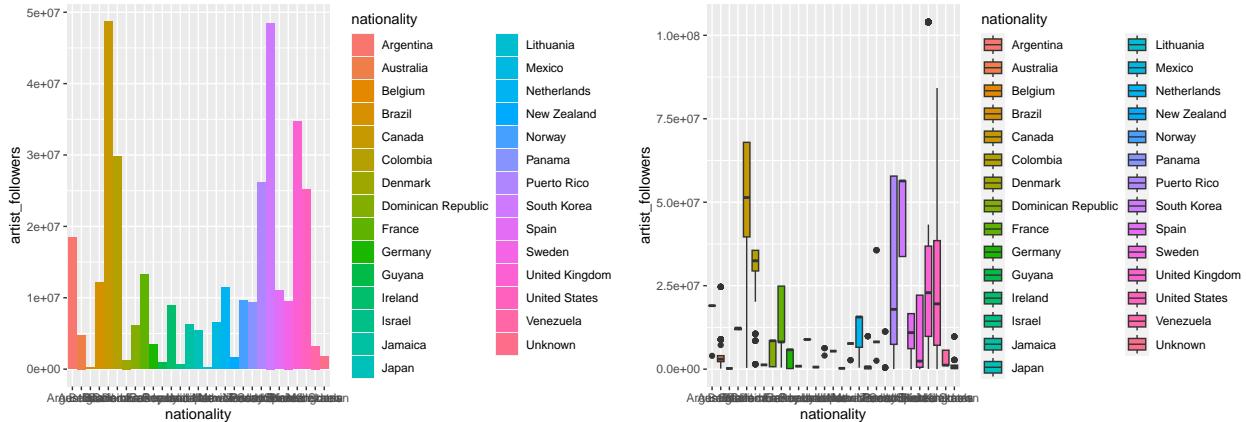
group: Venezuela

vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	13	66.46	7.26	60	66.36	0	60	74	14	0.14	-2.13

group: Unknown

vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	64	67.56	10.65	72	68.19	0	45	85	40	-0.59	-0.25

[1] "artist\_followers and album\_type"



#### Descriptive statistics by group

group: Argentina

vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	27	18467799	2892254	19022087	19024189	17715.59	3995914	19034036			
X1	15038122	-4.63	20.22	556614.6								

group: Australia

vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	177	4764586	5524791	2981241	3715695	1090642	175677	24661433	24485756		
X1	2.6	6.62	415268.7									

-----

group: Belgium

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	15	210804	0	210804	210804	0	210804	210804	0	NaN	NaN	0

-----

group: Brazil

	vars	n	mean	sd	median	trimmed	mad	min	max	range			
X1	1	23	12155974	215962.6	12294684	12174417	0	11836657	12302950	466293	skew	kurtosis	se
X1	-0.8	-1.42	45031.31										

-----

group: Canada

	vars	n	mean	sd	median	trimmed	mad	min	max				
X1	1	775	48667769	22812288	51405766	52112518	22842160	378265	68054384	range	skew	kurtosis	se
X1	67676119	-1.08	-0.13	819441.6									

-----

group: Colombia

	vars	n	mean	sd	median	trimmed	mad	min	max				
X1	1	301	29792193	8716994	32465601	31998522	4604957	1482835	35603307	range	skew	kurtosis	se
X1	34120472	-2.13	3.55	502439.2									

-----

group: Denmark

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	
X1	1	13	1291738	0	1291738	1291738	0	1291738	1291738	0	NaN	NaN	se
X1	0												

-----

group: Dominican Republic

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew		
X1	1	26	6118445	3654752	8507285	6389692	0	742776	8510398	7767622	-0.79	kurtosis	se
X1	-1.43	716755.8											

-----

group: France

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew		
X1	1	90	13290343	8388094	8145715	13024672	11660.65	456151	24882427	24426276	skew	kurtosis	se
X1	0.56	-1.45	884182.8										

-----

group: Germany

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew		
X1	1	86	3483756	2606751	5824485	3595379	2413.67	3805	5826113	5822308	-0.34	kurtosis	se
X1	-1.77	281093.1											

-----

group: Guyana

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	43	891668	0	891668	891668	0	891668	891668	0	NaN	NaN	0

-----

group: Ireland

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew		
X1	1	14	8896463	869.18	8895839	8896422	0	8895839	8897587	1748	0.53		

	kurtosis	se
X1	-1.83	232.3

---

group: Israel												
	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis
X1	1	19	616257.5	41.55	616230	616255.6	0	616230	616317	87	0.73	-1.54
			se									
X1			9.53									

---

group: Jamaica											
	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew
X1	1	26	6224486	437676.1	6310302	6310309	0	4078602	6310461	2231859	-4.53
	kurtosis	se									
X1			19.23	85835.35							

---

group: Japan													
	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	9	5397616	0	5397616	5397616	0	5397616	5397616	0	NaN	NaN	0

---

group: Lithuania											
	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew
X1	1	25	246819.2	19.04	246832	246820.6	0	246792	246832	40	-0.73
	kurtosis	se									
X1			-1.53	3.81							

---

group: Mexico											
	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew
X1	1	13	6537886	2185486	7687965	6781878	0	2703902	7687965	4984063	-1.13
	kurtosis	se									
X1			-0.76	606144.7							

---

group: Netherlands										
	vars	n	mean	sd	median	trimmed	mad	min	max	range
X1	1	94	11443314	5358026	15633727	12169679	4146.83	436542	15636524	15199982
	skew	kurtosis	se							
X1		-0.69	-1.04	552638.2						

---

group: New Zealand											
	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew
X1	1	47	1603147	3211517	721924	908090.4	909761.9	108298	9874802	9766504	2.13
	kurtosis	se									
X1		2.64	468448								

---

group: Norway										
	vars	n	mean	sd	median	trimmed	mad	min	max	range
X1	1	73	9599207	6347803	8170703	8171267	1208.32	2535340	35674493	33139153
	skew	kurtosis	se							
X1		3.75	12.54	742954.2						

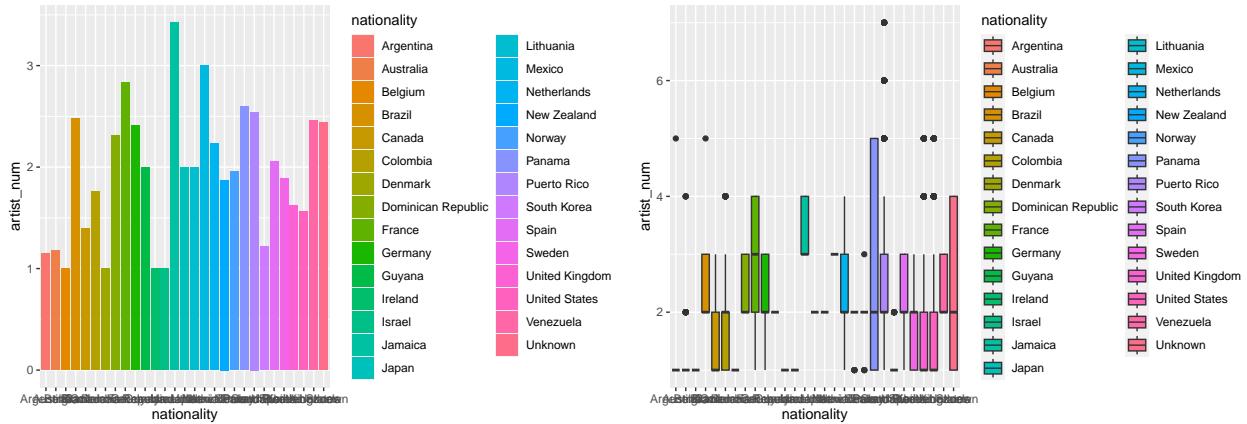
---

group: Panama											
	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew
X1	1	62	9359056	4166256	11278433	10196519	0	460823	11278433	10817610	-1.65
	kurtosis	se									
X1		0.73	529115.1								

```

-----
group: Puerto Rico
  vars n      mean      sd   median trimmed     mad    min      max
X1    1 715 26100479 21490335 17914328 25280564 20844922 42127 57945768
       range skew kurtosis      se
X1 57903641 0.47    -1.31 803692.9
-----
group: South Korea
  vars n      mean      sd   median trimmed mad      min      max      range
X1    1 89 48481395 10842052 56375377 49234353 0 33708510 56375377 22666867
       skew kurtosis      se
X1 -0.63    -1.63 1149255
-----
group: Spain
  vars n      mean      sd   median trimmed     mad    min      max      range
X1    1 58 11000161 4782327 10947624 11045457 7108427 54232 16634936 16580704
       skew kurtosis      se
X1 -0.01    -1.43 627950.3
-----
group: Sweden
  vars n      mean      sd   median trimmed     mad    min      max      range
X1    1 131 9547229 9983708 2401044 9141655 3289940 14787 22172771 22157984
       skew kurtosis      se
X1 0.39    -1.75 872280.6
-----
group: United Kingdom
  vars n      mean      sd   median trimmed     mad    min      max
X1    1 1247 34651179 36519558 22904843 30227801 20673207 77222 104059839
       range skew kurtosis      se
X1 103982617 1.16    -0.23 1034171
-----
group: United States
  vars n      mean      sd   median trimmed     mad    min      max
X1    1 4560 25187317 22572175 19562506 21762932 21438381 25288 84227300
       range skew kurtosis      se
X1 84202012 1.15    0.57 334265.1
-----
group: Venezuela
  vars n      mean      sd   median trimmed mad      min      max      range skew
X1    1 13 3261010 2329698 1188746 3229117 0 1188746 5684092 4495346 0.14
       kurtosis      se
X1   -2.13 646141.9
-----
group: Unknown
  vars n      mean      sd median trimmed     mad    min      max      range skew
X1    1 64 1775382 2945623 666990 1056091 750122.9 22644 9763803 9741159 2.1
       kurtosis      se
X1    2.95 368202.8
[1] "artist_num and album_type"

```



#### Descriptive statistics by group

group: Argentina

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	27	1.15	0.77	1	1	0	1	5	4	4.63	20.22	0.15

group: Australia

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se	
X1	1	177	1.18	0.53	1	1	1.04	0	1	4	3	3.78	15.78	0.04

group: Belgium

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	15	1	0	1	1	0	1	1	0	NaN	NaN	0

group: Brazil

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	23	2.48	0.73	2	2.37	0	2	5	3	1.74	3.38	0.15

group: Canada

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	775	1.4	0.55	1	1.33	0	1	3	2	0.97	-0.11	0.02

group: Colombia

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	301	1.76	0.81	2	1.63	1.48	1	4	3	1.1	1.06	0.05

group: Denmark

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	13	1	0	1	1	0	1	1	0	NaN	NaN	0

group: Dominican Republic

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	26	2.31	0.47	2	2.27	0	2	3	1	0.79	-1.43	0.09

group: France

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	90	2.83	0.86	3	2.81	1.48	1	4	3	0.22	-1.44	0.09

group: Germany

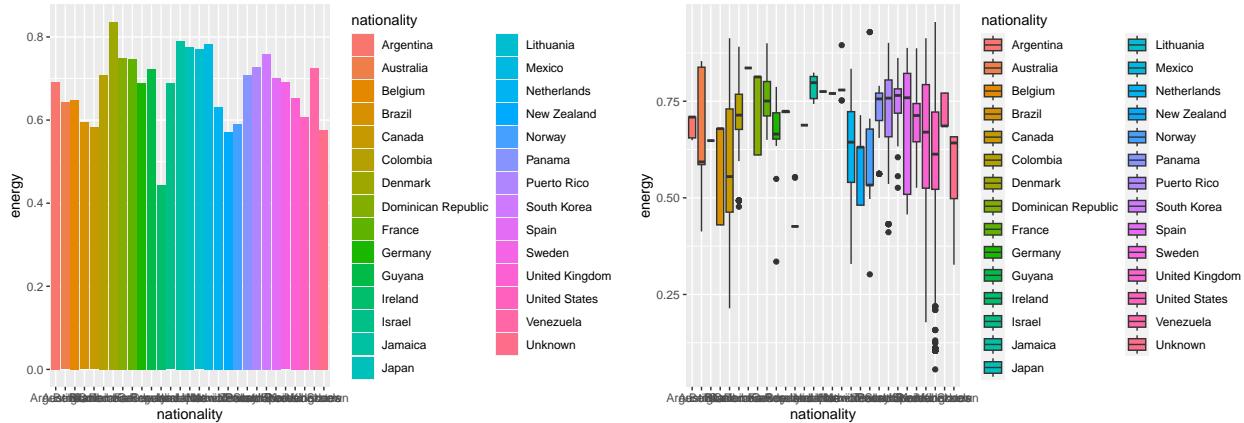
	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
--	------	---	------	----	--------	---------	-----	-----	-----	-------	------	----------	----

X1	1	86	2.41	0.54	2	2.41	0	1	3	2	-0.08	-1.12	0.06
<hr/>													
group: Guyana													
	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	43	2	0	2	2	0	2	2	0	NaN	NaN	0
<hr/>													
group: Ireland													
	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	14	1	0	1	1	0	1	1	0	NaN	NaN	0
<hr/>													
group: Israel													
	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	19	1	0	1	1	0	1	1	0	NaN	NaN	0
<hr/>													
group: Jamaica													
	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	26	3.42	0.5	3	3.41	0	3	4	1	0.29	-1.99	0.1
<hr/>													
group: Japan													
	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	9	2	0	2	2	0	2	2	0	NaN	NaN	0
<hr/>													
group: Lithuania													
	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	25	2	0	2	2	0	2	2	0	NaN	NaN	0
<hr/>													
group: Mexico													
	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	13	3	0	3	3	0	3	3	0	NaN	NaN	0
<hr/>													
group: Netherlands													
	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	94	2.23	1	2	2.17	1.48	1	4	3	0.55	-0.75	0.1
<hr/>													
group: New Zealand													
	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	47	1.87	0.34	2	1.95	0	1	2	1	-2.16	2.73	0.05
<hr/>													
group: Norway													
	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	73	1.96	0.26	2	2	0	1	3	2	-1.86	10.61	0.03
<hr/>													
group: Panama													
	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	62	2.6	1.78	2	2.5	1.48	1	5	4	0.52	-1.59	0.23
<hr/>													
group: Puerto Rico													
	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	715	2.54	1.44	2	2.32	1.48	1	7	6	1.42	1.35	0.05
<hr/>													
group: South Korea													
	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	89	1.21	0.41	1	1.15	0	1	2	1	1.37	-0.11	0.04
<hr/>													

```

group: Spain
  vars   n  mean    sd median trimmed   mad min  max range skew kurtosis   se
X1     1 58 2.05 0.74      2    2.06 1.48   1   3     2 -0.08   -1.18 0.1
-----
group: Sweden
  vars   n  mean    sd median trimmed   mad min  max range skew kurtosis   se
X1     1 131 1.89 0.69      2    1.86  0   1   3     2  0.15   -0.9  0.06
-----
group: United Kingdom
  vars   n  mean    sd median trimmed   mad min  max range skew kurtosis   se
X1     1 1247 1.62 0.9      1    1.44  0   1   5     4  1.63   2.42 0.03
-----
group: United States
  vars   n  mean    sd median trimmed   mad min  max range skew kurtosis   se
X1     1 4560 1.56 0.73      1    1.43  0   1   5     4  1.4    2.36 0.01
-----
group: Venezuela
  vars   n  mean    sd median trimmed   mad min  max range skew kurtosis   se
X1     1 13 2.46 0.52      2    2.45  0   2   3     1  0.14   -2.13 0.14
-----
group: Unknown
  vars   n  mean    sd median trimmed   mad min  max range skew kurtosis   se
X1     1 64 2.44 1.39      2    2.42 1.48   1   4     3  0.14   -1.86 0.17
[1] "energy and album_type"

```



```

Descriptive statistics by group
group: Argentina
  vars   n  mean    sd median trimmed   mad min  max range skew kurtosis   se
X1     1 27 0.69 0.03      0.71    0.69   0  0.65 0.71   0.06 -0.75   -1.42 0.01
-----
group: Australia
  vars   n  mean    sd median trimmed   mad min  max range skew kurtosis   se
X1     1 177 0.64 0.14      0.59    0.64  0.01 0.41 0.85   0.44  0.28   -0.84 0.01
-----
group: Belgium
  vars   n  mean    sd median trimmed   mad min  max range skew kurtosis   se
X1     1 15 0.65 0     0.65    0.65   0  0.65 0.65   0  NaN    NaN  0
-----
group: Brazil

```

```

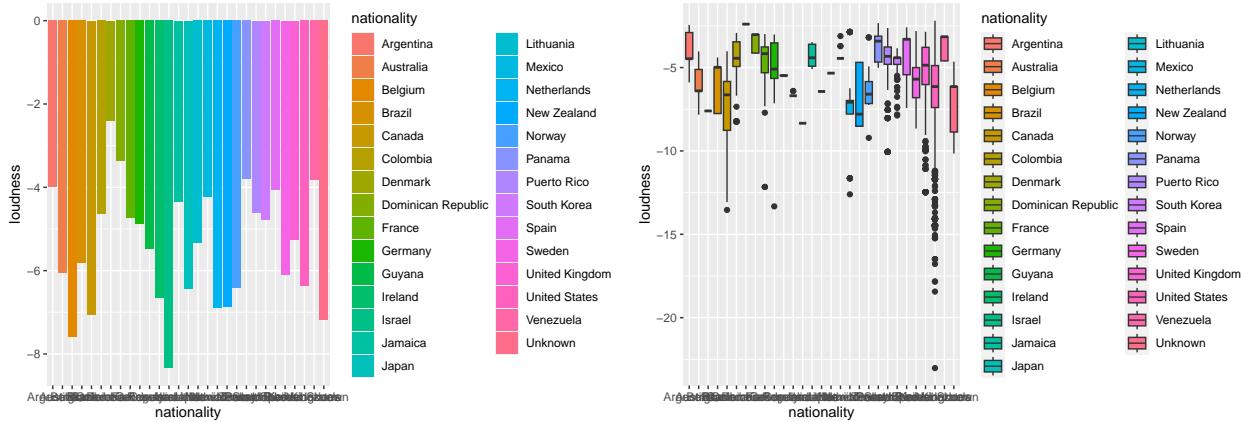
vars n mean sd median trimmed mad min max range skew kurtosis se
X1   1 23 0.59 0.12   0.68     0.6   0 0.43 0.68  0.25 -0.65   -1.56 0.02
-----
group: Canada
vars n mean sd median trimmed mad min max range skew kurtosis se
X1   1 775 0.58 0.16   0.56     0.58 0.18 0.21 0.91   0.7 -0.09   -0.59 0.01
-----
group: Colombia
vars n mean sd median trimmed mad min max range skew kurtosis se
X1   1 301 0.71 0.07   0.71     0.71 0.07 0.48 0.89   0.41 -0.86    1.48 0
-----
group: Denmark
vars n mean sd median trimmed mad min max range skew kurtosis se
X1   1 13 0.84 0     0.84     0.84 0 0.84 0.84     0 NaN      NaN 0
-----
group: Dominican Republic
vars n mean sd median trimmed mad min max range skew kurtosis se
X1   1 26 0.75 0.09   0.81     0.76 0 0.61 0.81   0.2 -0.78   -1.43 0.02
-----
group: France
vars n mean sd median trimmed mad min max range skew kurtosis se
X1   1 90 0.75 0.07   0.75     0.74 0.07 0.65 0.9   0.25 0.32    -0.3 0.01
-----
group: Germany
vars n mean sd median trimmed mad min max range skew kurtosis se
X1   1 86 0.69 0.07   0.66     0.69 0.08 0.34 0.79   0.45 -1.34    6.33 0.01
-----
group: Guyana
vars n mean sd median trimmed mad min max range skew kurtosis se
X1   1 43 0.72 0     0.72     0.72 0 0.72 0.72   0.01 -0.64   -1.18 0
-----
group: Ireland
vars n mean sd median trimmed mad min max range skew kurtosis se
X1   1 14 0.44 0.05   0.43     0.44 0 0.43 0.55   0.13 1.83    1.46 0.01
-----
group: Israel
vars n mean sd median trimmed mad min max range skew kurtosis se
X1   1 19 0.69 0     0.69     0.69 0 0.69 0.69     0 NaN      NaN 0
-----
group: Jamaica
vars n mean sd median trimmed mad min max range skew kurtosis se
X1   1 26 0.79 0.03   0.8      0.79 0.02 0.74 0.82   0.08 -0.81   -1.18 0.01
-----
group: Japan
vars n mean sd median trimmed mad min max range skew kurtosis se
X1   1 9 0.78 0     0.78     0.78 0 0.78 0.78     0 NaN      NaN 0
-----
group: Lithuania
vars n mean sd median trimmed mad min max range skew kurtosis se
X1   1 25 0.77 0     0.77     0.77 0 0.77 0.77     0 NaN      NaN 0
-----
group: Mexico
vars n mean sd median trimmed mad min max range skew kurtosis se
X1   1 13 0.78 0.03   0.78     0.78 0 0.75 0.9   0.14 2.37    5.04 0.01

```

```

-----
group: Netherlands
  vars n mean   sd median trimmed mad min max range skew kurtosis   se
X1    1 94 0.63 0.14    0.64    0.64 0.15 0.33 0.83  0.5 -0.32   -0.41 0.01
-----
group: New Zealand
  vars n mean   sd median trimmed mad min max range skew kurtosis   se
X1    1 47 0.57 0.09    0.63    0.57 0.12 0.48 0.71  0.23 0.15   -1.62 0.01
-----
group: Norway
  vars n mean   sd median trimmed mad min max range skew kurtosis   se
X1    1 73 0.59 0.11    0.53    0.58 0.06 0.3 0.93  0.63 1.06    2.28 0.01
-----
group: Panama
  vars n mean   sd median trimmed mad min max range skew kurtosis   se
X1    1 62 0.71 0.08    0.76    0.72 0.05 0.56 0.79  0.23 -0.87   -0.69 0.01
-----
group: Puerto Rico
  vars n mean   sd median trimmed mad min max range skew kurtosis se
X1    1 715 0.73 0.1    0.76    0.73 0.12 0.41 0.9   0.49 -0.49   -0.43 0
-----
group: South Korea
  vars n mean   sd median trimmed mad min max range skew kurtosis   se
X1    1 89 0.76 0.07    0.76    0.76 0.05 0.53 0.86  0.34 -0.61    1.34 0.01
-----
group: Spain
  vars n mean   sd median trimmed mad min max range skew kurtosis   se
X1    1 58 0.7 0.15    0.76    0.71 0.11 0.46 0.89  0.43 -0.59   -1.4 0.02
-----
group: Sweden
  vars n mean   sd median trimmed mad min max range skew kurtosis   se
X1    1 131 0.69 0.1    0.71    0.69 0.1 0.53 0.89  0.36 -0.07   -0.79 0.01
-----
group: United Kingdom
  vars n mean   sd median trimmed mad min max range skew kurtosis   se
X1    1 1247 0.65 0.16   0.67    0.66 0.19 0.18 0.91  0.74 -0.39   -0.96 0
-----
group: United States
  vars n mean   sd median trimmed mad min max range skew kurtosis   se
X1    1 4560 0.61 0.15   0.61    0.61 0.15 0.06 0.96  0.9 -0.43    0.14 0
-----
group: Venezuela
  vars n mean   sd median trimmed mad min max range skew kurtosis   se
X1    1 13 0.73 0.04    0.69    0.72    0 0.69 0.77  0.08 0.14   -2.13 0.01
-----
group: Unknown
  vars n mean   sd median trimmed mad min max range skew kurtosis   se
X1    1 64 0.58 0.11    0.64    0.59 0.02 0.33 0.66  0.33 -0.96   -0.65 0.01
[1] "loudness and album_type"

```



### Descriptive statistics by group

group: Argentina

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	27	-3.99	0.92	-4.47	-4.02	0	-5.89	-2.44	3.45	0.52	-0.82	0.18

group: Australia

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	177	-6.05	0.93	-6.4	-6.13	0.12	-7.83	-4.03	3.8	0.88	0.09	0.07

group: Belgium

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	15	-7.6	0	-7.6	-7.6	0	-7.6	-7.6	0	NaN	NaN	0

group: Brazil

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	23	-5.82	1.32	-4.98	-5.74	0	-7.76	-4.39	3.36	-0.75	-1.43	0.27

group: Canada

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	775	-7.05	1.99	-6.64	-6.96	2.06	-13.54	-4.02	9.52	-0.53	-0.27	
													se
X1													0.07

group: Colombia

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	301	-4.65	1.32	-4.44	-4.47	1.42	-8.23	-2.92	5.31	-1.08	0.88	
													se
X1													0.08

group: Denmark

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	13	-2.4	0	-2.4	-2.4	0	-2.4	-2.4	0	NaN	NaN	0

group: Dominican Republic

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	26	-3.36	0.52	-3.02	-3.33	0	-4.13	-3.02	1.11	-0.79	-1.43	0.1

group: France

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
--	------	---	------	----	--------	---------	-----	-----	-----	-------	------	----------	----

	X1	1	90	-4.73	1.78	-4.17	-4.46	1.67	-12.16	-2.99	9.17	-2.4	7.46	0.19
group: Germany	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se	
	X1	1	86	-4.87	1.42	-5.09	-4.86	0.83	-13.33	-3.02	10.31	-2	12.5	0.15
group: Guyana	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se	
	X1	1	43	-5.47	0.01	-5.48	-5.47	0	-5.48	-5.46	0.03	0.53	-1.71	0
group: Ireland	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se	
	X1	1	14	-6.65	0.1	-6.69	-6.67	0	-6.69	-6.4	0.29	1.83	1.46	0.03
group: Israel	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se	
	X1	1	19	-8.34	0	-8.34	-8.34	0	-8.34	-8.34	0	NaN	NaN	0
group: Jamaica	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se	
	X1	1	26	-4.34	0.59	-4.41	-4.35	1.01	-5.09	-3.48	1.62	0.1	-1.41	0.11
group: Japan	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se	
	X1	1	9	-6.43	0	-6.43	-6.43	0	-6.43	-6.43	0	NaN	NaN	0
group: Lithuania	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se	
	X1	1	25	-5.34	0	-5.34	-5.34	0	-5.34	-5.34	0	NaN	NaN	0
group: Mexico	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se	
	X1	1	13	-4.23	0.43	-4.45	-4.32	0	-4.45	-3.11	1.34	1.49	0.77	0.12
group: Netherlands	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se	
	X1	1	94	-6.89	2.26	-7.08	-6.84	1.05	-12.6	-2.87	9.74	0.09	0.62	0.23
group: New Zealand	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se	
	X1	1	47	-6.88	1.84	-7.79	-6.93	1.08	-8.52	-4.69	3.83	0.33	-1.88	0.27
group: Norway	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se	
	X1	1	73	-6.41	0.92	-6.6	-6.5	0.83	-9.21	-3.19	6.02	1.33	4.51	0.11
group: Panama	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se	
	X1	1	62	-3.81	0.94	-3.42	-3.84	1.61	-5.01	-2.33	2.68	0.09	-1.43	0.12
group: Puerto Rico	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se	
	X1	1	715	-4.6	1.43	-4.33	-4.41	0.74	-10.06	-2.63	7.43	-1.96	5.06	

X1 0.05

group: South Korea

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	89	-4.78	0.87	-4.41	-4.63	0.51	-7.87	-3.84	4.03	-1.84	3.23	0.09

group: Spain

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	58	-4.06	1.36	-3.3	-3.96	1.06	-7.43	-2.59	4.84	-0.76	-0.89	0.18

group: Sweden

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	131	-6.09	1.38	-5.7	-6.04	1.28	-8.66	-2.81	5.85	-0.25	-0.7	
													se
X1	0.12												

group: United Kingdom

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	1247	-5.25	1.88	-4.86	-5.01	1.68	-12.47	-2.85	9.62	-1.32	2.25	
													se
X1	0.05												

group: United States

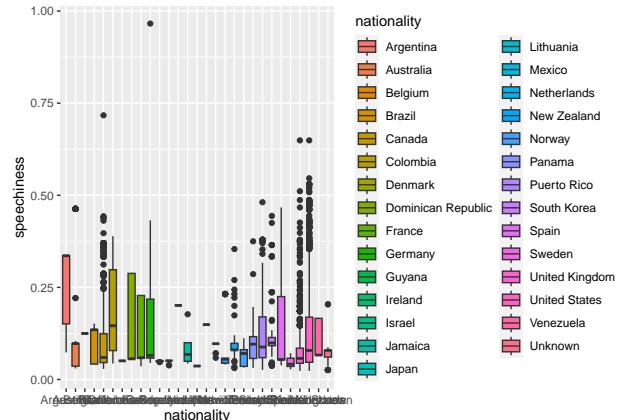
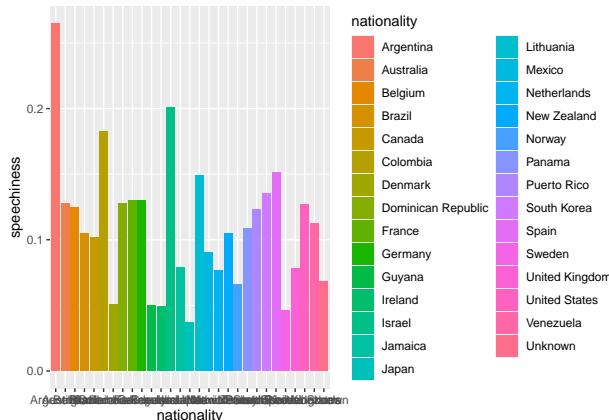
	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	4560	-6.36	2.24	-6.14	-6.14	1.87	-23.02	-2.19	20.84	-1.31	3.24	
													se
X1	0.03												

group: Venezuela

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	13	-3.82	0.75	-3.15	-3.81	0	-4.6	-3.15	1.45	-0.14	-2.13	0.21

group: Unknown

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	64	-7.18	1.87	-6.14	-7.15	1.18	-10.16	-4.64	5.51	-0.4	-1.29	0.23
[1]	"speechiness and album_type"												



#### Descriptive statistics by group

group: Argentina

```

vars n mean sd median trimmed mad min max range skew kurtosis se
X1   1 27 0.26 0.1   0.34    0.27   0 0.07 0.34  0.26 -0.74    -1.4 0.02
-----
group: Australia
vars n mean sd median trimmed mad min max range skew kurtosis se
X1   1 177 0.13 0.14   0.1     0.1 0.09 0.03 0.46  0.43 1.77    1.47 0.01
-----
group: Belgium
vars n mean sd median trimmed mad min max range skew kurtosis se
X1   1 15 0.12 0   0.12    0.12   0 0.12 0.12    0 NaN      NaN 0
-----
group: Brazil
vars n mean sd median trimmed mad min max range skew kurtosis se
X1   1 23 0.11 0.04   0.14    0.11   0 0.04 0.15  0.11 -0.65    -1.56 0.01
-----
group: Canada
vars n mean sd median trimmed mad min max range skew kurtosis se
X1   1 775 0.1 0.09   0.06    0.08 0.04 0.03 0.72  0.69 2.06    4.68 0
-----
group: Colombia
vars n mean sd median trimmed mad min max range skew kurtosis se
X1   1 301 0.18 0.11   0.15    0.17 0.11 0.04 0.39  0.35 0.51    -1.22 0.01
-----
group: Denmark
vars n mean sd median trimmed mad min max range skew kurtosis se
X1   1 13 0.05 0   0.05    0.05   0 0.05 0.05    0 NaN      NaN 0
-----
group: Dominican Republic
vars n mean sd median trimmed mad min max range skew kurtosis se
X1   1 26 0.13 0.11   0.06    0.12   0 0.06 0.29  0.23 0.79    -1.43 0.02
-----
group: France
vars n mean sd median trimmed mad min max range skew kurtosis se
X1   1 90 0.13 0.09   0.06    0.13 0.03 0.04 0.23  0.19 0.16    -1.93 0.01
-----
group: Germany
vars n mean sd median trimmed mad min max range skew kurtosis se
X1   1 86 0.13 0.12   0.07    0.11 0.03 0.04 0.97  0.92 3.98    23.06 0.01
-----
group: Guyana
vars n mean sd median trimmed mad min max range skew kurtosis se
X1   1 43 0.05 0   0.05    0.05   0 0.05 0.05    0 -1.1     2.34 0
-----
group: Ireland
vars n mean sd median trimmed mad min max range skew kurtosis se
X1   1 14 0.05 0   0.05    0.05   0 0.04 0.05  0.01 -1.83    1.47 0
-----
group: Israel
vars n mean sd median trimmed mad min max range skew kurtosis se
X1   1 19 0.2 0   0.2     0.2    0 0.2 0.2    0 NaN      NaN 0
-----
group: Jamaica
vars n mean sd median trimmed mad min max range skew kurtosis se
X1   1 26 0.08 0.03   0.07    0.08 0.04 0.04 0.18  0.13 0.9     1.34 0.01

```

```

-----
group: Japan
  vars n mean sd median trimmed mad min max range skew kurtosis se
X1    1 9 0.04 0  0.04   0.04  0 0.04 0.04   0  NaN     NaN  0
-----
group: Lithuania
  vars n mean sd median trimmed mad min max range skew kurtosis se
X1    1 25 0.15 0  0.15   0.15  0 0.15 0.15   0  NaN     NaN  0
-----
group: Mexico
  vars n mean sd median trimmed mad min max range skew kurtosis se
X1    1 13 0.09 0.01 0.1   0.09  0 0.06 0.1  0.04 -1.28  -0.12 0
-----
group: Netherlands
  vars n mean sd median trimmed mad min max range skew kurtosis se
X1    1 94 0.08 0.07 0.06  0.06  0.02 0.04 0.23  0.19  1.9   1.7 0.01
-----
group: New Zealand
  vars n mean sd median trimmed mad min max range skew kurtosis se
X1    1 47 0.1 0.06 0.08  0.09  0.02 0.03 0.35  0.32  2.08  4.06 0.01
-----
group: Norway
  vars n mean sd median trimmed mad min max range skew kurtosis se
X1    1 73 0.07 0.03 0.07  0.06  0.03 0.03 0.11  0.08  0.06  -1.15 0
-----
group: Panama
  vars n mean sd median trimmed mad min max range skew kurtosis se
X1    1 62 0.11 0.06 0.1   0.1  0.06 0.03 0.38  0.34  1.62  3.43 0.01
-----
group: Puerto Rico
  vars n mean sd median trimmed mad min max range skew kurtosis se
X1    1 715 0.12 0.09 0.09  0.11  0.05 0.03 0.48  0.46  1.35  1.01 0
-----
group: South Korea
  vars n mean sd median trimmed mad min max range skew kurtosis se
X1    1 89 0.14 0.1  0.1   0.12  0.01 0.04 0.44  0.41  1.62  1.49 0.01
-----
group: Spain
  vars n mean sd median trimmed mad min max range skew kurtosis se
X1    1 58 0.15 0.15 0.05  0.13  0.01 0.04 0.47  0.43  1.3   0.18 0.02
-----
group: Sweden
  vars n mean sd median trimmed mad min max range skew kurtosis se
X1    1 131 0.05 0.01 0.04  0.04  0.01 0.03 0.07  0.04  0.48  -0.92 0
-----
group: United Kingdom
  vars n mean sd median trimmed mad min max range skew kurtosis se
X1    1 1247 0.08 0.06 0.06  0.07  0.03 0.02 0.65  0.63  3.33  15.66 0
-----
group: United States
  vars n mean sd median trimmed mad min max range skew kurtosis se
X1    1 4560 0.13 0.11 0.08  0.11  0.06 0.02 0.65  0.63  1.42  1.15 0
-----
group: Venezuela

```

```

vars n mean sd median trimmed mad min max range skew kurtosis se
X1   1 13 0.11 0.05    0.07    0.11    0 0.07 0.17    0.1 0.14    -2.13 0.01

```

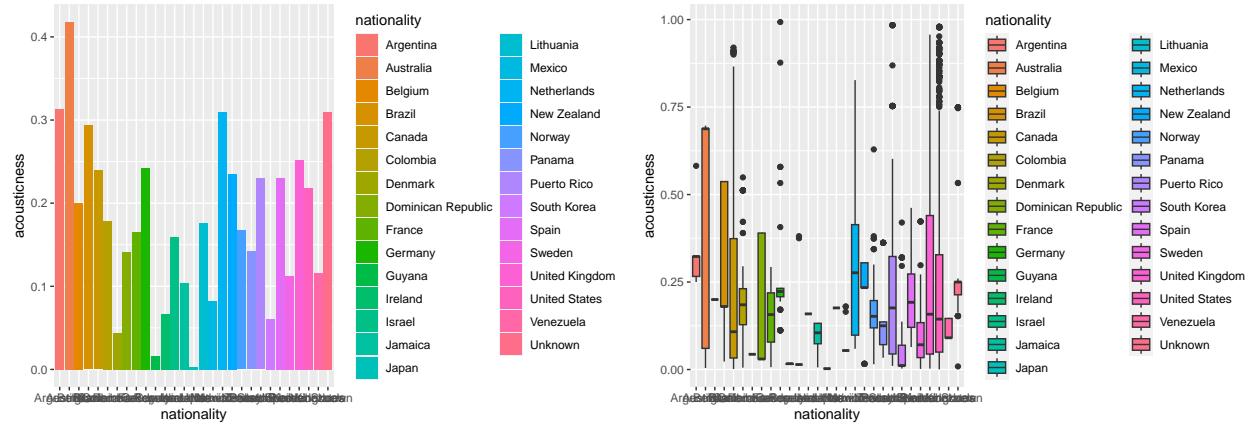
group: Unknown

```

vars n mean sd median trimmed mad min max range skew kurtosis se
X1   1 64 0.07 0.03    0.08    0.07 0.02 0.03 0.2    0.18 2.02     7.87 0

```

[1] "acousticness and album\_type"



#### Descriptive statistics by group

group: Argentina

```

vars n mean sd median trimmed mad min max range skew kurtosis se
X1   1 27 0.31 0.06    0.32    0.31    0 0.25 0.58    0.33 2.84    10.56 0.01

```

group: Australia

```

vars n mean sd median trimmed mad min max range skew kurtosis se
X1   1 177 0.42 0.3    0.69    0.43 0.01    0 0.7 0.69 -0.29    -1.79 0.02

```

group: Belgium

```

vars n mean sd median trimmed mad min max range skew kurtosis se
X1   1 15 0.2 0    0.2    0.2    0 0.2 0.2    0 NaN      NaN 0

```

group: Brazil

```

vars n mean sd median trimmed mad min max range skew kurtosis se
X1   1 23 0.29 0.18    0.18    0.29    0 0.02 0.54    0.51 0.5    -1.56 0.04

```

group: Canada

```

vars n mean sd median trimmed mad min max range skew kurtosis se
X1   1 775 0.24 0.27    0.11    0.2 0.16    0 0.92 0.92 1.16    0.15 0.01

```

group: Colombia

```

vars n mean sd median trimmed mad min max range skew kurtosis se
X1   1 301 0.18 0.12    0.18    0.17 0.08 0.01 0.55 0.54 0.58    0.76 0.01

```

group: Denmark

```

vars n mean sd median trimmed mad min max range skew kurtosis se
X1   1 13 0.04 0    0.04    0.04    0 0.04 0.04    0 NaN      NaN 0

```

group: Dominican Republic

```

vars n mean sd median trimmed mad min max range skew kurtosis se

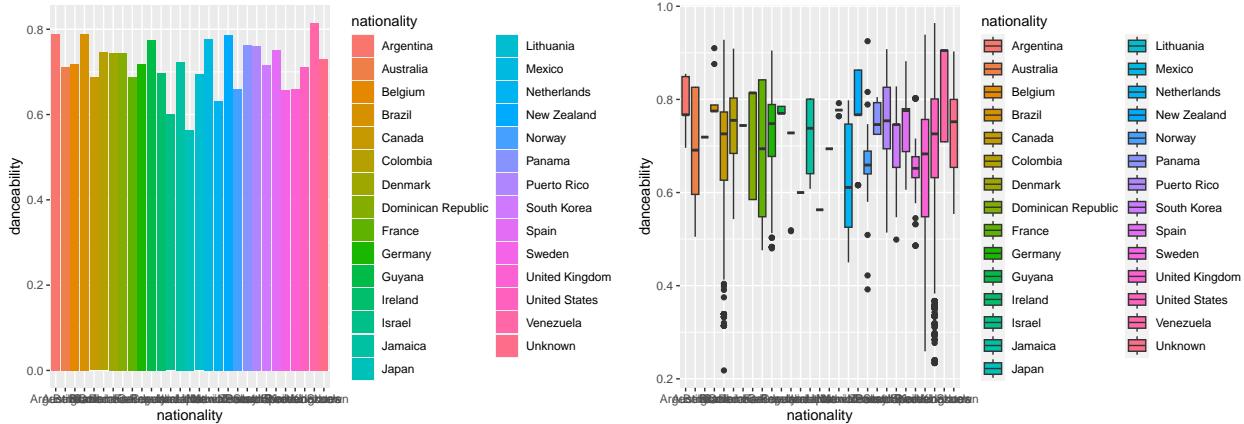
```

X1	1	26	0.14	0.17	0.03	0.13	0	0.03	0.39	0.36	0.79	-1.43	0.03
<hr/>													
group: France													
	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	90	0.17	0.08	0.16	0.17	0.1	0.01	0.29	0.29	-0.14	-0.99	0.01
<hr/>													
group: Germany													
	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	86	0.24	0.14	0.22	0.22	0.02	0.11	0.99	0.88	3.55	13.97	0.01
<hr/>													
group: Guyana													
	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	43	0.02	0	0.02	0.02	0	0.01	0.02	0	-0.47	-1.72	0
<hr/>													
group: Ireland													
	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	14	0.07	0.13	0.01	0.04	0	0.01	0.38	0.37	1.83	1.46	0.04
<hr/>													
group: Israel													
	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	19	0.16	0	0.16	0.16	0	0.16	0.16	0	NaN	NaN	0
<hr/>													
group: Jamaica													
	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	26	0.1	0.03	0.1	0.11	0.04	0.01	0.13	0.13	-1.12	1.16	0.01
<hr/>													
group: Japan													
	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	9	0	0	0	0	0	0	0	0	NaN	NaN	0
<hr/>													
group: Lithuania													
	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	25	0.18	0	0.18	0.18	0	0.18	0.18	0	NaN	NaN	0
<hr/>													
group: Mexico													
	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	13	0.08	0.05	0.05	0.08	0	0.05	0.18	0.13	1.15	-0.7	0.01
<hr/>													
group: Netherlands													
	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	94	0.31	0.23	0.28	0.28	0.23	0.06	0.83	0.77	0.82	-0.27	0.02
<hr/>													
group: New Zealand													
	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	47	0.23	0.09	0.23	0.25	0.11	0.02	0.3	0.29	-1.59	1.41	0.01
<hr/>													
group: Norway													
	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	73	0.17	0.11	0.15	0.16	0.05	0.02	0.63	0.61	1.14	2.42	0.01
<hr/>													
group: Panama													
	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	62	0.14	0.11	0.12	0.13	0.08	0.03	0.36	0.33	1.2	0.08	0.01
<hr/>													

```

group: Puerto Rico
  vars   n mean   sd median trimmed mad min max range skew kurtosis   se
X1     1 715 0.23 0.2    0.18      0.2 0.21 0.01 0.98  0.97 1.14      1.08 0.01
-----
group: South Korea
  vars   n mean   sd median trimmed mad min max range skew kurtosis   se
X1     1 89 0.06 0.09    0.01      0.04 0.01 0 0.42  0.42 2.28      4.34 0.01
-----
group: Spain
  vars   n mean   sd median trimmed mad min max range skew kurtosis   se
X1     1 58 0.23 0.14    0.19      0.22 0.12 0.06 0.46  0.4 0.44      -0.98 0.02
-----
group: Sweden
  vars   n mean   sd median trimmed mad min max range skew kurtosis   se
X1     1 131 0.11 0.1    0.07      0.1 0.09 0 0.42  0.42 1.16      0.71 0.01
-----
group: United Kingdom
  vars   n mean   sd median trimmed mad min max range skew kurtosis   se
X1     1 1247 0.25 0.25    0.16      0.22 0.19 0 0.96  0.95 0.93      -0.55 0.01
-----
group: United States
  vars   n mean   sd median trimmed mad min max range skew kurtosis   se
X1     1 4560 0.22 0.22    0.14      0.18 0.16 0 0.98  0.98 1.37      1.28 0
-----
group: Venezuela
  vars   n mean   sd median trimmed mad min max range skew kurtosis   se
X1     1 13 0.12 0.03    0.09      0.12 0 0.09 0.15  0.06 0.14      -2.13 0.01
-----
group: Unknown
  vars   n mean   sd median trimmed mad min max range skew kurtosis   se
X1     1 64 0.31 0.2    0.25      0.28 0.03 0.01 0.75  0.74 1.44      0.58 0.03
[1] "danceability and album_type"

```



```

Descriptive statistics by group
group: Argentina
  vars   n mean   sd median trimmed mad min max range skew kurtosis   se
X1     1 27 0.79 0.04    0.77      0.79 0 0.7 0.86  0.16 0.42      -0.88 0.01
-----

```

```

group: Australia

```

```

vars n mean sd median trimmed mad min max range skew kurtosis se
X1 1 177 0.71 0.11 0.69 0.72 0.2 0.5 0.83 0.32 -0.17 -1.53 0.01
-----
group: Belgium
vars n mean sd median trimmed mad min max range skew kurtosis se
X1 1 15 0.72 0 0.72 0.72 0 0.72 0.72 0 NaN NaN 0
-----
group: Brazil
vars n mean sd median trimmed mad min max range skew kurtosis se
X1 1 23 0.79 0.03 0.78 0.78 0 0.78 0.91 0.14 2.7 6.12 0.01
-----
group: Canada
vars n mean sd median trimmed mad min max range skew kurtosis se
X1 1 775 0.69 0.14 0.73 0.7 0.12 0.22 0.93 0.71 -0.76 0.21 0.01
-----
group: Colombia
vars n mean sd median trimmed mad min max range skew kurtosis se
X1 1 301 0.75 0.1 0.76 0.75 0.11 0.54 0.91 0.37 -0.57 -0.53 0.01
-----
group: Denmark
vars n mean sd median trimmed mad min max range skew kurtosis se
X1 1 13 0.74 0 0.74 0.74 0 0.74 0.74 0 NaN NaN 0
-----
group: Dominican Republic
vars n mean sd median trimmed mad min max range skew kurtosis se
X1 1 26 0.74 0.11 0.81 0.75 0 0.58 0.82 0.23 -0.79 -1.43 0.02
-----
group: France
vars n mean sd median trimmed mad min max range skew kurtosis se
X1 1 90 0.69 0.13 0.69 0.7 0.22 0.48 0.84 0.37 -0.12 -1.44 0.01
-----
group: Germany
vars n mean sd median trimmed mad min max range skew kurtosis se
X1 1 86 0.72 0.11 0.75 0.73 0.06 0.48 0.9 0.43 -1.21 0.28 0.01
-----
group: Guyana
vars n mean sd median trimmed mad min max range skew kurtosis se
X1 1 43 0.78 0.01 0.77 0.77 0 0.77 0.78 0.02 0.61 -1.66 0
-----
group: Ireland
vars n mean sd median trimmed mad min max range skew kurtosis se
X1 1 14 0.7 0.08 0.73 0.71 0 0.52 0.73 0.21 -1.83 1.46 0.02
-----
group: Israel
vars n mean sd median trimmed mad min max range skew kurtosis se
X1 1 19 0.6 0 0.6 0.6 0 0.6 0.6 0 NaN NaN 0
-----
group: Jamaica
vars n mean sd median trimmed mad min max range skew kurtosis se
X1 1 26 0.72 0.08 0.74 0.73 0.1 0.61 0.8 0.2 -0.57 -1.25 0.01
-----
group: Japan
vars n mean sd median trimmed mad min max range skew kurtosis se
X1 1 9 0.56 0 0.56 0.56 0 0.56 0.56 0 NaN NaN 0

```

```

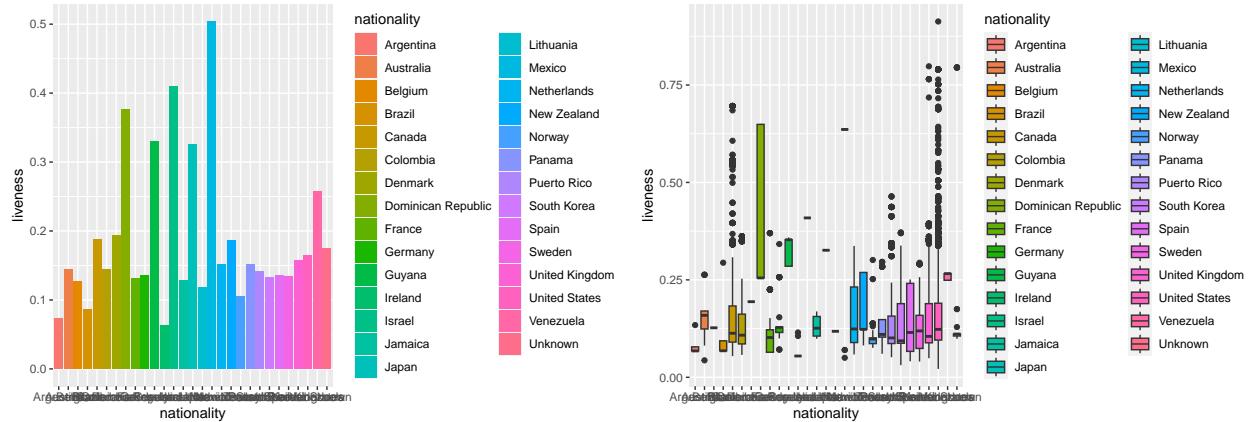
-----
group: Lithuania
  vars n mean sd median trimmed mad min max range skew kurtosis se
X1   1 25 0.69 0 0.69 0.69 0 0.69 0.69 0 NaN NaN 0
-----
group: Mexico
  vars n mean sd median trimmed mad min max range skew kurtosis se
X1   1 13 0.78 0.01 0.78 0.78 0 0.76 0.79 0.03 0.1 0.86 0
-----
group: Netherlands
  vars n mean sd median trimmed mad min max range skew kurtosis se
X1   1 94 0.63 0.11 0.61 0.63 0.16 0.45 0.8 0.35 0.05 -1.26 0.01
-----
group: New Zealand
  vars n mean sd median trimmed mad min max range skew kurtosis se
X1   1 47 0.79 0.08 0.77 0.8 0.14 0.62 0.86 0.25 -0.89 -0.02 0.01
-----
group: Norway
  vars n mean sd median trimmed mad min max range skew kurtosis se
X1   1 73 0.66 0.07 0.66 0.66 0.04 0.39 0.92 0.53 -0.49 6.19 0.01
-----
group: Panama
  vars n mean sd median trimmed mad min max range skew kurtosis se
X1   1 62 0.76 0.03 0.75 0.76 0.03 0.72 0.8 0.08 0.14 -1.79 0
-----
group: Puerto Rico
  vars n mean sd median trimmed mad min max range skew kurtosis se
X1   1 715 0.76 0.09 0.75 0.76 0.09 0.51 0.91 0.39 -0.25 -0.85 0
-----
group: South Korea
  vars n mean sd median trimmed mad min max range skew kurtosis se
X1   1 89 0.72 0.08 0.75 0.72 0.07 0.5 0.83 0.33 -0.79 -0.24 0.01
-----
group: Spain
  vars n mean sd median trimmed mad min max range skew kurtosis se
X1   1 58 0.75 0.07 0.78 0.75 0.07 0.61 0.88 0.28 -0.2 -0.35 0.01
-----
group: Sweden
  vars n mean sd median trimmed mad min max range skew kurtosis se
X1   1 131 0.66 0.07 0.65 0.65 0.04 0.49 0.8 0.32 0.16 1.08 0.01
-----
group: United Kingdom
  vars n mean sd median trimmed mad min max range skew kurtosis se
X1   1 1247 0.66 0.14 0.68 0.67 0.15 0.26 0.94 0.68 -0.56 -0.18 0
-----
group: United States
  vars n mean sd median trimmed mad min max range skew kurtosis se
X1   1 4560 0.71 0.13 0.73 0.72 0.13 0.23 0.96 0.73 -0.68 0.49 0
-----
group: Venezuela
  vars n mean sd median trimmed mad min max range skew kurtosis se
X1   1 13 0.81 0.1 0.9 0.82 0 0.71 0.9 0.2 -0.14 -2.13 0.03
-----
group: Unknown

```

```

vars n mean sd median trimmed mad min max range skew kurtosis se
X1 1 64 0.73 0.1 0.75 0.74 0.07 0.55 0.9 0.35 -0.44 -0.87 0.01
[1] "liveness and album_type"

```



Descriptive statistics by group  
group: Argentina

```

vars n mean sd median trimmed mad min max range skew kurtosis se
X1 1 27 0.07 0.01 0.07 0.07 0 0.07 0.13 0.07 3.52 13.31 0

```

group: Australia

```

vars n mean sd median trimmed mad min max range skew kurtosis se
X1 1 177 0.14 0.04 0.16 0.15 0.02 0.04 0.26 0.22 0.02 1.13 0

```

group: Belgium

```

vars n mean sd median trimmed mad min max range skew kurtosis se
X1 1 15 0.13 0 0.13 0.13 0 0.13 0.13 0 NaN NaN 0

```

group: Brazil

```

vars n mean sd median trimmed mad min max range skew kurtosis se
X1 1 23 0.09 0.05 0.07 0.08 0 0.07 0.29 0.23 3.76 13.83 0.01

```

group: Canada

```

vars n mean sd median trimmed mad min max range skew kurtosis se
X1 1 775 0.19 0.17 0.11 0.15 0.03 0.05 0.7 0.64 1.81 2.05 0.01

```

group: Colombia

```

vars n mean sd median trimmed mad min max range skew kurtosis se
X1 1 301 0.14 0.09 0.11 0.13 0.07 0.06 0.36 0.3 1.39 0.75 0.01

```

group: Denmark

```

vars n mean sd median trimmed mad min max range skew kurtosis se
X1 1 13 0.19 0 0.19 0.19 0 0.19 0.19 0 NaN NaN 0

```

group: Dominican Republic

```

vars n mean sd median trimmed mad min max range skew kurtosis se
X1 1 26 0.38 0.19 0.26 0.36 0 0.26 0.65 0.39 0.79 -1.43 0.04

```

group: France

```

vars n mean sd median trimmed mad min max range skew kurtosis se

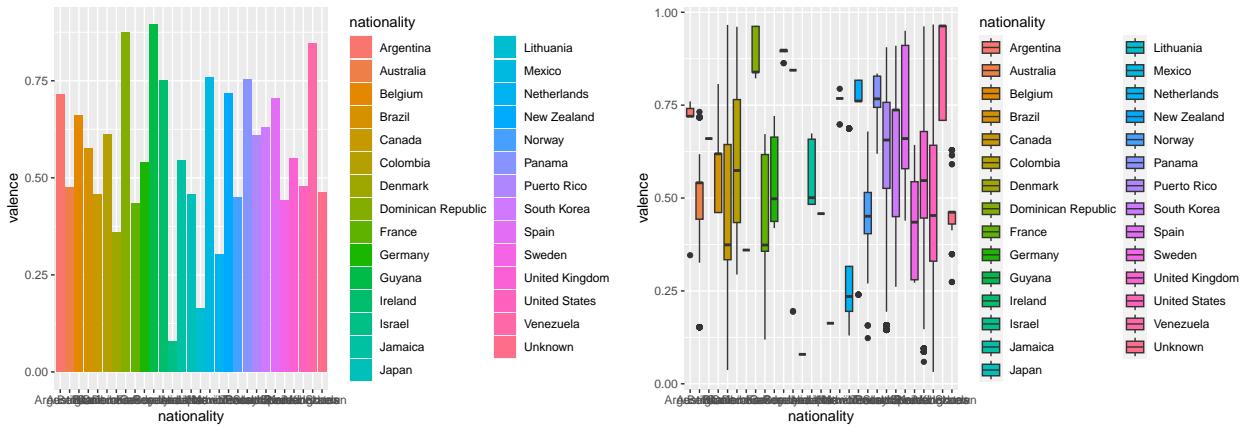
```

X1	1	90	0.13	0.08	0.1	0.12	0.06	0.06	0.37	0.31	1.6	1.76	0.01
<hr/>													
group: Germany													
	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	86	0.14	0.05	0.13	0.13	0.02	0.07	0.34	0.27	2.39	5.32	0.01
<hr/>													
group: Guyana													
	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	43	0.33	0.03	0.35	0.33	0	0.28	0.36	0.07	-0.61	-1.66	0.01
<hr/>													
group: Ireland													
	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	14	0.06	0.02	0.05	0.06	0	0.05	0.12	0.06	1.86	1.62	0.01
<hr/>													
group: Israel													
	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	19	0.41	0	0.41	0.41	0	0.41	0.41	0	NaN	NaN	0
<hr/>													
group: Jamaica													
	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	26	0.13	0.02	0.13	0.13	0.04	0.1	0.17	0.07	0.11	-1.32	0
<hr/>													
group: Japan													
	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	9	0.33	0	0.33	0.33	0	0.33	0.33	0	NaN	NaN	0
<hr/>													
group: Lithuania													
	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	25	0.12	0	0.12	0.12	0	0.12	0.12	0	NaN	NaN	0
<hr/>													
group: Mexico													
	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	13	0.5	0.25	0.64	0.53	0	0.05	0.64	0.59	-1.13	-0.75	0.07
<hr/>													
group: Netherlands													
	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	94	0.15	0.08	0.12	0.14	0.05	0.06	0.34	0.28	0.91	-0.39	0.01
<hr/>													
group: New Zealand													
	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	47	0.19	0.08	0.12	0.19	0.06	0.08	0.27	0.19	0.04	-1.92	0.01
<hr/>													
group: Norway													
	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	73	0.11	0.04	0.1	0.1	0.01	0.08	0.3	0.23	3.56	13.49	0
<hr/>													
group: Panama													
	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	62	0.15	0.08	0.11	0.15	0.06	0.06	0.3	0.24	0.84	-0.85	0.01
<hr/>													
group: Puerto Rico													
	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	715	0.14	0.09	0.1	0.12	0.03	0.05	0.46	0.41	1.74	2.27	0
<hr/>													

```

group: South Korea
  vars n mean sd median trimmed mad min max range skew kurtosis se
X1   1 89 0.13 0.1    0.09    0.12 0.05 0.03 0.37  0.34 1.32      0.42 0.01
-----
group: Spain
  vars n mean sd median trimmed mad min max range skew kurtosis se
X1   1 58 0.14 0.08   0.12    0.13 0.07 0.04 0.25  0.21 0.34     -1.38 0.01
-----
group: Sweden
  vars n mean sd median trimmed mad min max range skew kurtosis se
X1   1 131 0.13 0.07   0.12    0.13 0.07 0.04 0.29  0.25 0.72     -0.67 0.01
-----
group: United Kingdom
  vars n mean sd median trimmed mad min max range skew kurtosis se
X1   1 1247 0.16 0.11   0.1    0.14 0.04 0.05 0.8   0.75 1.69      3.89 0
-----
group: United States
  vars n mean sd median trimmed mad min max range skew kurtosis se
X1   1 4560 0.17 0.12   0.12    0.14 0.05 0.02 0.91  0.89 2.57      8.46 0
-----
group: Venezuela
  vars n mean sd median trimmed mad min max range skew kurtosis se
X1   1 13 0.26 0.01   0.27    0.26 0 0.25 0.27  0.02 -0.14     -2.13 0
-----
group: Unknown
  vars n mean sd median trimmed mad min max range skew kurtosis se
X1   1 64 0.17 0.2   0.11    0.11 0 0.1 0.8   0.7  2.7      5.43 0.03
[1] "valence and album_type"

```



```

Descriptive statistics by group
group: Argentina
  vars n mean sd median trimmed mad min max range skew kurtosis se
X1   1 27 0.72 0.08   0.72    0.73 0 0.35 0.76  0.41 -4.33     18.42 0.01
-----
group: Australia
  vars n mean sd median trimmed mad min max range skew kurtosis se
X1   1 177 0.47 0.16   0.54    0.48 0.11 0.15 0.73  0.58 -0.82     0.25 0.01
-----
group: Belgium

```

```

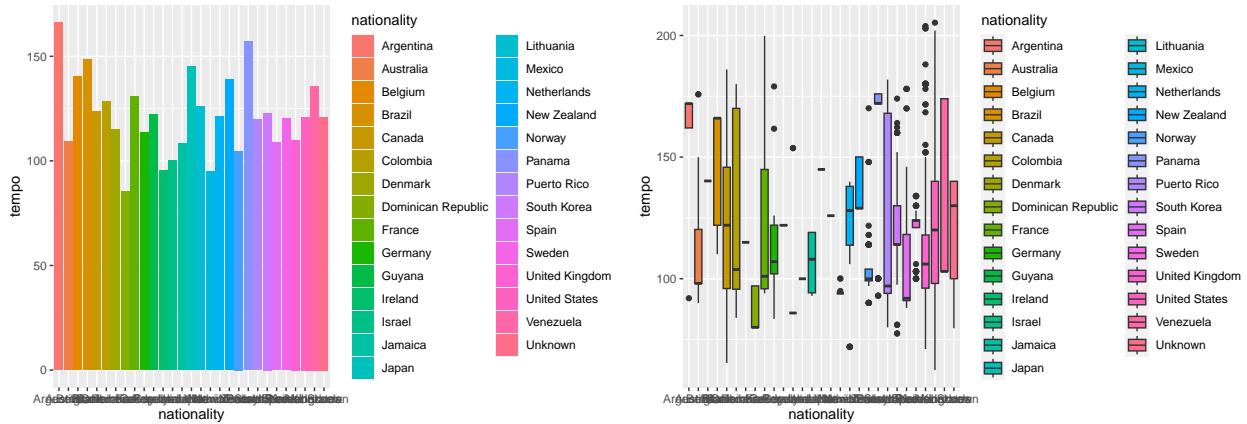
vars n mean sd median trimmed mad min max range skew kurtosis se
X1 1 15 0.66 0 0.66 0.66 0 0.66 0.66 0 NaN NaN 0
-----
group: Brazil
vars n mean sd median trimmed mad min max range skew kurtosis se
X1 1 23 0.58 0.09 0.62 0.57 0 0.46 0.81 0.35 0.16 -0.08 0.02
-----
group: Canada
vars n mean sd median trimmed mad min max range skew kurtosis se
X1 1 775 0.46 0.25 0.37 0.45 0.3 0.04 0.97 0.93 0.33 -0.83 0.01
-----
group: Colombia
vars n mean sd median trimmed mad min max range skew kurtosis se
X1 1 301 0.61 0.19 0.57 0.61 0.24 0.29 0.96 0.67 0.02 -1.09 0.01
-----
group: Denmark
vars n mean sd median trimmed mad min max range skew kurtosis se
X1 1 13 0.36 0 0.36 0.36 0 0.36 0.36 0 NaN NaN 0
-----
group: Dominican Republic
vars n mean sd median trimmed mad min max range skew kurtosis se
X1 1 26 0.87 0.06 0.84 0.87 0 0.82 0.96 0.14 0.76 -1.43 0.01
-----
group: France
vars n mean sd median trimmed mad min max range skew kurtosis se
X1 1 90 0.43 0.18 0.37 0.45 0.31 0.12 0.67 0.55 -0.43 -1.26 0.02
-----
group: Germany
vars n mean sd median trimmed mad min max range skew kurtosis se
X1 1 86 0.54 0.09 0.5 0.54 0.1 0.42 0.72 0.3 0.32 -1.47 0.01
-----
group: Guyana
vars n mean sd median trimmed mad min max range skew kurtosis se
X1 1 43 0.89 0.01 0.9 0.9 0 0.86 0.9 0.04 -3.72 13.28 0
-----
group: Ireland
vars n mean sd median trimmed mad min max range skew kurtosis se
X1 1 14 0.75 0.24 0.84 0.79 0 0.19 0.84 0.65 -1.83 1.45 0.06
-----
group: Israel
vars n mean sd median trimmed mad min max range skew kurtosis se
X1 1 19 0.08 0 0.08 0.08 0 0.08 0.08 0 NaN NaN 0
-----
group: Jamaica
vars n mean sd median trimmed mad min max range skew kurtosis se
X1 1 26 0.54 0.08 0.5 0.54 0.03 0.48 0.67 0.19 0.81 -1.32 0.02
-----
group: Japan
vars n mean sd median trimmed mad min max range skew kurtosis se
X1 1 9 0.46 0 0.46 0.46 0 0.46 0.46 0 NaN NaN 0
-----
group: Lithuania
vars n mean sd median trimmed mad min max range skew kurtosis se
X1 1 25 0.16 0 0.16 0.16 0 0.16 0.16 0 NaN NaN 0

```

```

-----
group: Mexico
  vars n mean sd median trimmed mad min max range skew kurtosis se
X1   1 13 0.76 0.03  0.77    0.76  0 0.7 0.79  0.1 -1.42    0.66 0.01
-----
group: Netherlands
  vars n mean sd median trimmed mad min max range skew kurtosis se
X1   1 94 0.3 0.18  0.23    0.28 0.06 0.13 0.69  0.56 1.43    0.49 0.02
-----
group: New Zealand
  vars n mean sd median trimmed mad min max range skew kurtosis se
X1   1 47 0.72 0.19  0.76    0.76 0.08 0.24 0.82  0.58 -2.07    2.52 0.03
-----
group: Norway
  vars n mean sd median trimmed mad min max range skew kurtosis se
X1   1 73 0.45 0.12  0.45    0.45 0.09 0.12 0.68  0.56 -0.34    0.81 0.01
-----
group: Panama
  vars n mean sd median trimmed mad min max range skew kurtosis se
X1   1 62 0.75 0.08  0.77    0.76 0.09 0.62 0.84  0.22 -0.73   -0.99 0.01
-----
group: Puerto Rico
  vars n mean sd median trimmed mad min max range skew kurtosis se
X1   1 715 0.61 0.19  0.66    0.63 0.16 0.14 0.91  0.76   -1    0.23 0.01
-----
group: South Korea
  vars n mean sd median trimmed mad min max range skew kurtosis se
X1   1 89 0.63 0.19  0.74    0.63 0.23 0.26 0.91  0.65 -0.36   -1.17 0.02
-----
group: Spain
  vars n mean sd median trimmed mad min max range skew kurtosis se
X1   1 58 0.7 0.17  0.66    0.7 0.18 0.44 0.95  0.51 0.28   -1.32 0.02
-----
group: Sweden
  vars n mean sd median trimmed mad min max range skew kurtosis se
X1   1 131 0.44 0.14  0.44    0.44 0.2 0.27 0.64  0.37 -0.02   -1.56 0.01
-----
group: United Kingdom
  vars n mean sd median trimmed mad min max range skew kurtosis se
X1   1 1247 0.55 0.23  0.55    0.55 0.18 0.06 0.96  0.9 -0.03   -0.62 0.01
-----
group: United States
  vars n mean sd median trimmed mad min max range skew kurtosis se
X1   1 4560 0.48 0.2  0.45    0.47 0.21 0.03 0.97  0.93 0.22   -0.63 0
-----
group: Venezuela
  vars n mean sd median trimmed mad min max range skew kurtosis se
X1   1 13 0.85 0.13  0.96    0.85 0 0.71 0.96  0.25 -0.14   -2.13 0.04
-----
group: Unknown
  vars n mean sd median trimmed mad min max range skew kurtosis se
X1   1 64 0.46 0.09  0.46    0.46 0.05 0.27 0.63  0.36 0.39      0 0.01
[1] "tempo and album_type"

```



### Descriptive statistics by group

group: Argentina

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis
X1	1	27	166.06	15.51	171.99	168.94	0	91.98	171.99	80.01	-4	16.29
			se									
X1		2.98										

---

group: Australia

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis
X1	1	177	109.13	16.52	98.08	106.83	7.53	89.98	175.81	85.84	1.48	2.28
			se									
X1		1.24										

---

group: Belgium

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis
X1	1	15	140.2	0	140.2	140.2	0	140.2	140.2	0	NaN	NaN
			se									

---

group: Brazil

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis
X1	1	23	148.61	22.39	166.01	166.01	150.21	0	110.08	166.01	55.93	-0.47
			se									
X1		4.67										

---

group: Canada

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis
X1	1	775	123.68	30.41	122	122.8	35.47	65.38	186.05	120.68	0.26	-0.98
			se									
X1		1.09										

---

group: Colombia

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis
X1	1	301	128.21	37.58	103.81	126.48	17.46	83.9	180.07	96.17	0.39	-1.76
			se									
X1		2.17										

---

group: Denmark

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis
X1	1	13	114.97	0	114.97	114.97	0	114.97	114.97	0	NaN	NaN
			se									

---

group: Dominican Republic

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	26	85.24	8.02	80	84.64	0	79.99	97.04	17.05	0.79	-1.43	1.57

---

group: France

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis
X1	1	90	130.82	41.16	101	126.79	10.45	93.96	199.86	105.91	0.64	-1.23

se

X1	4.34
----	------

---

group: Germany

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis
X1	1	86	113.44	13.78	107.01	112.89	22.27	83.5	179.06	95.55	1.41	5.59

se

X1	1.49
----	------

---

group: Guyana

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	43	121.97	0.01	121.97	121.97	0	121.96	121.97	0.02	-0.57	-1.43	0

---

group: Ireland

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	14	95.59	24.62	85.91	91.56	0	85.91	153.75	67.84	1.83	1.45	6.58

---

group: Israel

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	19	99.98	0	99.98	99.98	0	99.98	99.98	0	NaN	NaN	0

---

group: Jamaica

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis
X1	1	26	108.23	11	108	108.64	16.36	92.94	119.04	26.1	-0.35	-1.57

se

X1	2.16
----	------

---

group: Japan

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	9	144.94	0	144.94	144.94	0	144.94	144.94	0	NaN	NaN	0

---

group: Lithuania

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	25	125.9	0	125.9	125.9	0	125.9	125.9	0	NaN	NaN	0

---

group: Mexico

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	13	95.03	2.25	94.02	94.66	0	94.02	100.07	6.04	1.66	0.89	0.62

---

group: Netherlands

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis
X1	1	94	121.04	18.66	128	124.16	14.78	71.88	139.91	68.03	-1.35	1.35

se

X1	1.93
----	------

---

group: New Zealand

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis
--	------	---	------	----	--------	---------	-----	-----	-----	-------	------	----------

```

X1      1 47 138.85 10.65 128.98 138.71 0.08 128.92 150.08 21.15 0.12      -2.03
      se
X1 1.55
-----
group: Norway
  vars n   mean     sd median trimmed   mad   min    max range skew kurtosis
X1      1 73 104.75 13.93 99.97 102.45 4.37 90.07 170.09 80.02 2.58      7.66
      se
X1 1.63
-----
group: Panama
  vars n   mean     sd median trimmed   mad   min    max range skew kurtosis
X1      1 62 156.98 31.89 172.09 161.95 5.77 93.03 176.04 83.02 -1.28      -0.35
      se
X1 4.05
-----
group: Puerto Rico
  vars n   mean     sd median trimmed   mad min    max range skew kurtosis
X1      1 715 119.72 36.04 97.01 116.61 11.88 80 181.88 101.88 0.77      -1.21
      se
X1 1.35
-----
group: South Korea
  vars n   mean     sd median trimmed   mad   min    max range skew kurtosis
X1      1 89 122.9 20.13 114.04 122.41 12.02 77.5 174.04 96.54 0.41      0.37
      se
X1 2.13
-----
group: Spain
  vars n   mean     sd median trimmed   mad   min    max range skew kurtosis
X1      1 58 108.71 29.72 91.95 103.82 3.98 87.98 178.04 90.07 1.31      0.09
      se
X1 3.9
-----
group: Sweden
  vars n   mean     sd median trimmed   mad min    max range skew kurtosis
X1      1 131 120.05 10.54 123.94 120.88 1.42 100 134.01 34.01 -0.93      -0.49
      se
X1 0.92
-----
group: United Kingdom
  vars n   mean     sd median trimmed   mad   min    max range skew kurtosis
X1      1 1247 109.99 18.37 106.03 107.63 14.9 71.11 203.86 132.76 1.7      4.59
      se
X1 0.52
-----
group: United States
  vars n   mean     sd median trimmed   mad   min    max range skew kurtosis
X1      1 4560 121.01 27.55 120.04 119.79 31.15 62.45 205.27 142.83 0.36
      kurtosis se
X1      -0.46 0.41
-----
group: Venezuela
  vars n   mean     sd median trimmed   mad   min    max range skew kurtosis

```

```

X1      1 13 135.78 36.84 103.01 135.28     0 103.01 174.01 70.99 0.14      -2.13
      se
X1 10.22

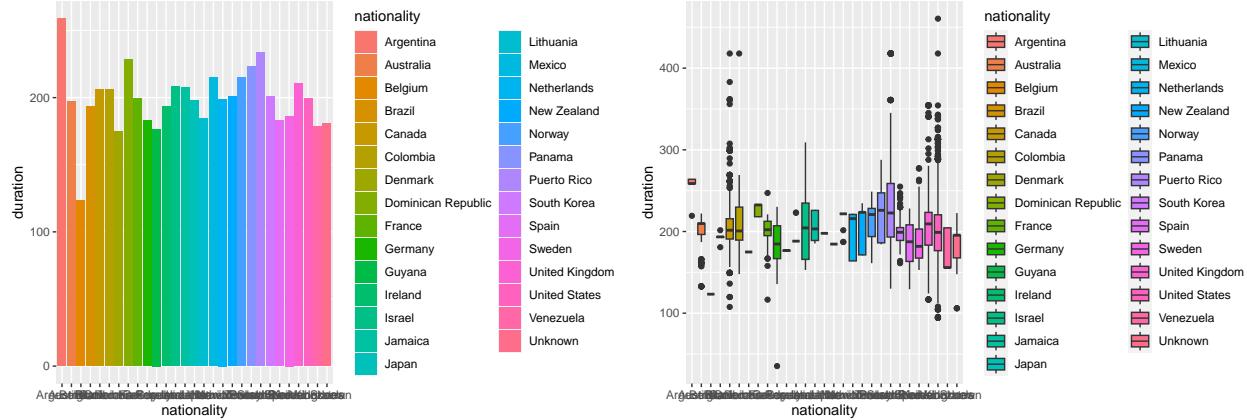
```

---

group: Unknown

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis
X1	1	64	120.98	22.25	130.02	123.55	14.86	79.64	140.04	60.41	-0.74	-1.08
			se									
X1			2.78									

[1] "duration and album\_type"



Descriptive statistics by group

group: Argentina

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	27	258.82	8.32	258.64	260.06	0	219.2	264.48	45.28	-3.91	16.06	1.6

---

group: Australia

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	177	197.29	22.98	209.75	200.47	9.4	132.78	222.04	89.26	-1.44	1.14	
			se										
X1			1.73										

---

group: Belgium

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	15	123.26	0	123.26	123.26	0	123.26	123.26	0	NaN	NaN	0

---

group: Brazil

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	23	193.07	3.2	193.46	193.26	0	180.79	201.53	20.74	-1.66	8.6	
			se										
X1			0.67										

---

group: Canada

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	775	206.31	33.18	201.57	203.35	17.95	107.67	417.92	310.25	1.52		
			kurtosis										
X1			5.73	1.19									

---

group: Colombia

```

vars n mean sd median trimmed mad min max range skew kurtosis
X1 1 301 206.11 26.94 200.67 205.32 24.06 147.8 417.92 270.12 1.62 11.34
    se
X1 1.55
-----
group: Denmark
vars n mean sd median trimmed mad min max range skew kurtosis se
X1 1 13 174.93 0 174.93 174.93 0 174.93 174.93 0 NaN NaN 0
-----
group: Dominican Republic
vars n mean sd median trimmed mad min max range skew kurtosis se
X1 1 26 228.1 6.8 232.55 228.61 0 218.11 232.55 14.44 -0.79 -1.43 1.33
-----
group: France
vars n mean sd median trimmed mad min max range skew kurtosis se
X1 1 90 199.4 16.06 202.15 201.32 13.29 116.56 247.16 130.6 -1.66 7.16
    se
X1 1.69
-----
group: Germany
vars n mean sd median trimmed mad min max range skew kurtosis
X1 1 86 182.78 26.06 184.73 184.78 26.6 35.24 230.23 194.99 -1.98 9.77
    se
X1 2.81
-----
group: Guyana
vars n mean sd median trimmed mad min max range skew kurtosis
X1 1 43 176.62 0.3 176.84 176.64 0 176.22 176.87 0.65 -0.61 -1.66
    se
X1 0.05
-----
group: Ireland
vars n mean sd median trimmed mad min max range skew kurtosis
X1 1 14 193.16 12.66 188.17 191.08 0 188.17 223.04 34.87 1.83 1.45
    se
X1 3.38
-----
group: Israel
vars n mean sd median trimmed mad min max range skew kurtosis
X1 1 19 208.31 46.89 204.35 205.64 53.31 152.91 309.12 156.21 0.54 -0.92
    se
X1 10.76
-----
group: Jamaica
vars n mean sd median trimmed mad min max range skew kurtosis
X1 1 26 207.85 17.11 203.18 208.25 26.43 185.35 225.85 40.5 -0.13 -1.68
    se
X1 3.36
-----
group: Japan
vars n mean sd median trimmed mad min max range skew kurtosis se
X1 1 9 197.79 0 197.79 197.79 0 197.79 197.79 0 NaN NaN 0
-----
group: Lithuania

```

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	25	184.56	0	184.56	184.56	0	184.56	184.56	0	NaN	NaN	0
<hr/>													
group: Mexico													
	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	13	214.8	13.45	221.65	216.69	0	187.2	221.65	34.45	-1.3	-0.14	3.73
<hr/>													
group: Netherlands													
	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	94	199.02	24.27	215.76	200.48	9.11	163.8	221.9	58.1	-0.53	-1.5	X1 2.5
<hr/>													
group: New Zealand													
	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	47	200.52	27.86	223.48	200	16.56	171.37	234.65	63.28	-0.07	-1.96	X1 4.06
<hr/>													
group: Norway													
	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	73	214.78	18.95	220.78	216.14	11.1	161.2	248.83	87.63	-0.88	0.46	X1 2.22
<hr/>													
group: Panama													
	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	62	223.43	35.78	225.93	220.41	59.01	184.25	287.77	103.52	0.45	-0.96	X1 4.54
<hr/>													
group: Puerto Rico													
	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	715	233.32	59.6	222.68	225.52	43.67	130.01	417.92	287.91	1.27	1.57	X1 2.23
<hr/>													
group: South Korea													
	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	89	200.89	19.89	199.05	199.54	14.83	161.17	254.95	93.78	0.68	0.04	X1 2.11
<hr/>													
group: Spain													
	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	58	183.21	28.2	187.43	185.63	30.74	129.37	228.14	98.77	-0.8	-0.57	X1 3.7
<hr/>													
group: Sweden													
	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis	se
X1	1	131	186.27	29.84	181.81	182.29	31.41	152.91	277.26	124.35	1.08	X1 0.85	2.61

```

group: United Kingdom
  vars   n   mean      sd median trimmed   mad   min   max range skew
X1     1 1247 210.39 34.24 209.32 207.24 33.11 116.75 354.32 237.57 1.36
    kurtosis   se
X1     4.15 0.97

```

```

group: United States
  vars   n   mean      sd median trimmed   mad   min   max range skew
X1     1 4560 199.61 37.14 198.94 198.72 32.66 94.25 460.57 366.33 0.46
    kurtosis   se
X1     1.56 0.55

```

```

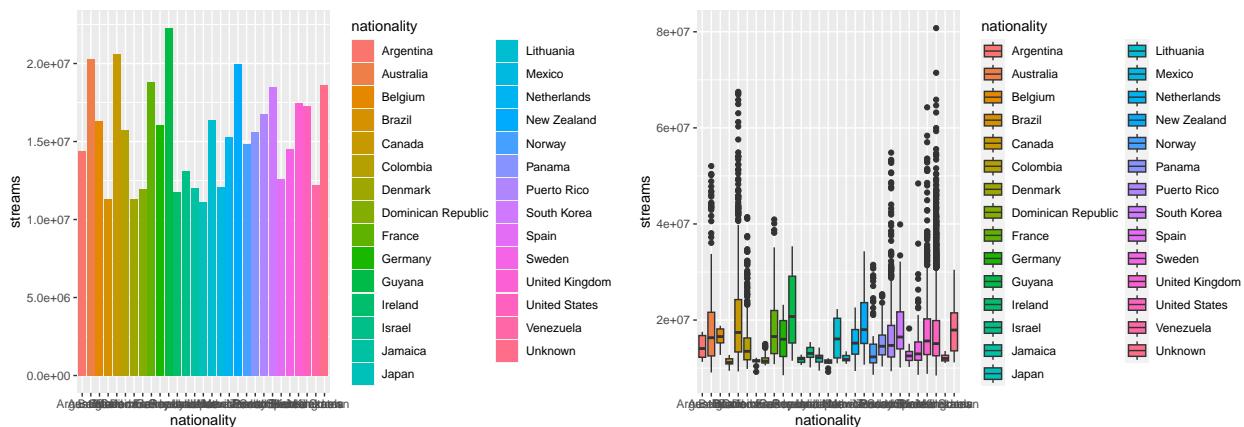
group: Venezuela
  vars   n   mean      sd median trimmed   mad   min   max range skew kurtosis se
X1     1 13 178.27 25.23 155.82 177.93  0 155.82 204.45 48.63 0.14 -2.13 7

```

```

group: Unknown
  vars   n   mean      sd median trimmed   mad   min   max range skew kurtosis
X1     1 64 180.7 27.93 195.43 182.08 7.95 106 222.53 116.53 -0.82      0.3
    se
X1 3.49
[1] "streams and album_type"

```



#### Descriptive statistics by group

group: Argentina

```

  vars   n   mean      sd median trimmed   mad   min   max range skew kurtosis se
X1     1 27 14393570 2270753 14065676 14396865 3182966 11291688 17547601 6255913
    skew   kurtosis   se
X1 0.06 -1.76 437006.7

```

group: Australia

```

  vars   n   mean      sd median trimmed   mad   min   max range skew kurtosis se
X1     1 177 20278288 10827755 16322527 18282485 5889325 9085236 52055226
    range   skew   kurtosis   se
X1 42969990 1.5 1.14 813863.9

```

group: Belgium

```

  vars   n   mean      sd median trimmed   mad   min   max range

```

```

X1      1 15 16299348 1932718 16566352 16380428 2332414 12733727 18810928 6077201
      skew kurtosis      se
X1 -0.4      -1.2 499025.7
-----
group: Brazil
  vars n      mean      sd      median      trimmed      mad      min      max
X1      1 23 11345046 818705.6 11164986 11369518 499413.8 9431454 12734008
      range skew kurtosis      se
X1 3302554 -0.15      -0.46 170711.9
-----
group: Canada
  vars n      mean      sd      median      trimmed      mad      min      max
X1      1 775 20599320 10182160 17419811 18759016 7022412 9304477 67499798
      range skew kurtosis      se
X1 58195321 1.85      3.92 365754
-----
group: Colombia
  vars n      mean      sd      median      trimmed      mad      min      max
X1      1 301 15723985 6182755 13491521 14413554 3039112 9818595 41434019
      range skew kurtosis      se
X1 31615424 1.92      3.25 356368
-----
group: Denmark
  vars n      mean      sd      median      trimmed      mad      min      max
X1      1 13 11307820 752238.2 11510309 11420848 279191.4 9222026 12150303
      range skew kurtosis      se
X1 2928277 -1.6      1.87 208633.3
-----
group: Dominican Republic
  vars n      mean      sd      median      trimmed      mad      min      max
X1      1 26 11957349 1343661 11448799 11819880 874401.2 10556847 15037831
      range skew kurtosis      se
X1 4480984 1.07      -0.19 263513.7
-----
group: France
  vars n      mean      sd      median      trimmed      mad      min      max
X1      1 90 18816298 7463071 16566727 17654517 5707891 10814271 40931264
      range skew kurtosis      se
X1 30116993 1.24      0.78 786676.8
-----
group: Germany
  vars n      mean      sd      median      trimmed      mad      min      max      range
X1      1 86 16043578 4153465 16002761 16021695 5540776 8509565 23177415 14667850
      skew kurtosis      se
X1 0.09      -1.36 447879.6
-----
group: Guyana
  vars n      mean      sd      median      trimmed      mad      min      max
X1      1 43 22269729 7877227 20717741 22021882 10164416 11527557 35360782
      range skew kurtosis      se
X1 23833225 0.23      -1.46 1201266
-----
group: Ireland
  vars n      mean      sd      median      trimmed      mad      min      max

```

```

X1      1 14 11757745 646012.1 11944947 11764483 463956.7 10635980 12798653
      range skew kurtosis      se
X1 2162673 -0.38     -1.21 172654
-----
group: Israel
  vars n      mean      sd      median      trimmed      mad      min      max      range
X1      1 19 13084054 1511997 13046731 13120023 1805955 10133115 15423526 5290411
      skew kurtosis      se
X1 -0.36     -1 346875.8
-----
group: Jamaica
  vars n      mean      sd      median      trimmed      mad      min      max      range
X1      1 26 12006037 1193047 12178138 12034400 752317.2 9466408 14278458 4812050
      skew kurtosis      se
X1 -0.35     -0.57 233975.7
-----
group: Japan
  vars n      mean      sd      median      trimmed      mad      min      max      range
X1      1 9 11116134 959945.4 11347477 11116134 522727.7 9219626 12062609 2842983
      skew kurtosis      se
X1 -0.82     -0.83 319981.8
-----
group: Lithuania
  vars n      mean      sd      median      trimmed      mad      min      max
X1      1 25 16406828 4109231 16072233 16394154 6185772 10987254 22288306
      range skew kurtosis      se
X1 11301052      0     -1.73 821846.1
-----
group: Mexico
  vars n      mean      sd      median      trimmed      mad      min      max
X1      1 13 12076290 835122.4 11786070 12057536 823646.6 10870577 13488299
      range skew kurtosis      se
X1 2617722      0.4     -1.31 231621.3
-----
group: Netherlands
  vars n      mean      sd      median      trimmed      mad      min      max      range
X1      1 94 15319995 3085880 15190326 15183033 3935994 9382981 22617665 13234684
      skew kurtosis      se
X1 0.34     -0.73 318284.2
-----
group: New Zealand
  vars n      mean      sd      median      trimmed      mad      min      max
X1      1 47 19954642 7059655 18000520 19430741 5266674 10705949 34310255
      range skew kurtosis      se
X1 23604306      0.78     -0.66 1029757
-----
group: Norway
  vars n      mean      sd      median      trimmed      mad      min      max      range
X1      1 73 14865521 6167933 12335650 13723768 2264222 8602986 31493823 22890837
      skew kurtosis      se
X1 1.52      0.96 721902
-----
group: Panama
  vars n      mean      sd      median      trimmed      mad      min      max

```

```

X1      1 62 15585324 3798332 14543380 15030664 2869614 10331366 25377792
      range skew kurtosis      se
X1 15046426 1.17      0.58 482388.7
-----
group: Puerto Rico
  vars n      mean      sd      median      trimmed      mad      min      max
X1      1 715 16752426 6863995 14712140 15490199 4142891 9351079 54848635
      range skew kurtosis      se
X1 45497556 2.57      8.62 256698.9
-----
group: South Korea
  vars n      mean      sd      median      trimmed      mad      min      max
X1      1 89 18496189 6137177 16470302 17778840 4821516 10119927 39904687
      range skew kurtosis      se
X1 29784760 1.12      0.7 650539.5
-----
group: Spain
  vars n      mean      sd      median      trimmed      mad      min      max      range
X1      1 58 12583604 1439278 12530888 12500176 1388875 10237609 18239577 8001968
      skew kurtosis      se
X1 0.99      2.22 188986.4
-----
group: Sweden
  vars n      mean      sd      median      trimmed      mad      min      max
X1      1 131 14490669 5218496 12956457 13526045 2573814 8595924 48430814
      range skew kurtosis      se
X1 39834890 3.18      14.47 455942.1
-----
group: United Kingdom
  vars n      mean      sd      median      trimmed      mad      min      max
X1      1 1247 17499731 6793057 15640441 16443906 4999262 8796175 64275251
      range skew kurtosis      se
X1 55479076 2.39      8.84 192367.6
-----
group: United States
  vars n      mean      sd      median      trimmed      mad      min      max
X1      1 4560 17292069 6891435 15105320 16144835 4615572 8454914 80764045
      range skew kurtosis      se
X1 72309131 2.15      7.42 102053.4
-----
group: Venezuela
  vars n      mean      sd      median      trimmed      mad      min      max      range
X1      1 13 12185050 840905.6 12004110 12161868 953767 11064377 13560728 2496351
      skew kurtosis      se
X1 0.23      -1.5 233225.3
-----
group: Unknown
  vars n      mean      sd      median      trimmed      mad      min      max
X1      1 64 18593005 5480932 17918306 18115874 6034206 11186423 30463204
      range skew kurtosis      se
X1 19276781 0.66      -0.6 685116.6

```

## 2. Dues variables numèriques

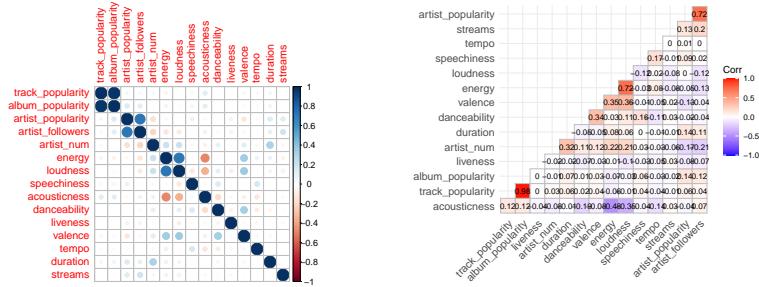
Per veure la relació entre les variables numèriques, primer farem una matriu de covariances i després per a cada parell de variables observarem el seu scatter plot:

[1] "Matriu de correlació: "

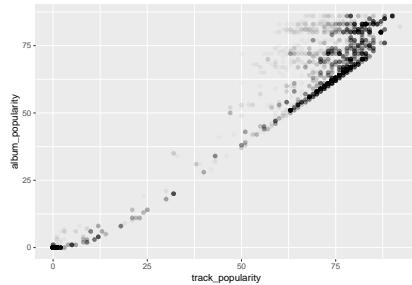
Loading required package: corrplot

corrplot 0.92 loaded

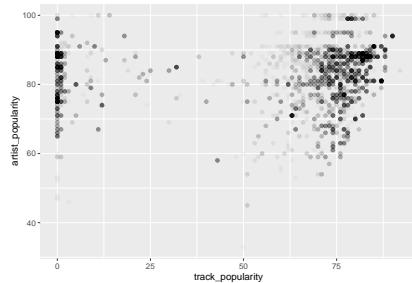
Loading required package: ggcormplot



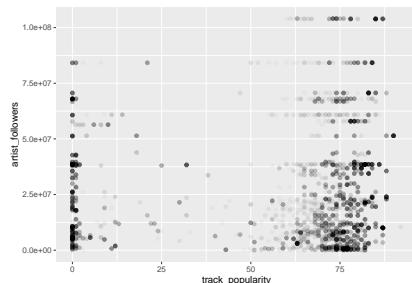
[1] "track\_popularity and album\_popularity"



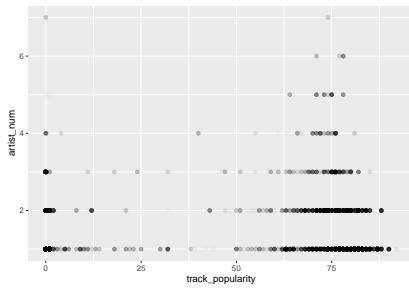
[1] "track\_popularity and artist\_popularity"



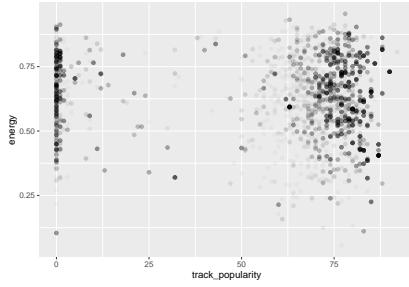
[1] "track\_popularity and artist\_followers"



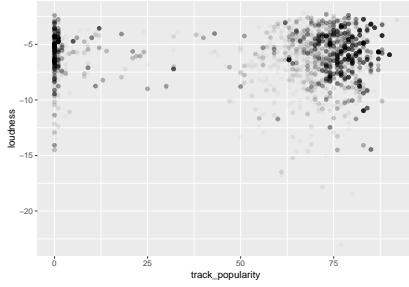
```
[1] "track_popularity and artist_num"
```



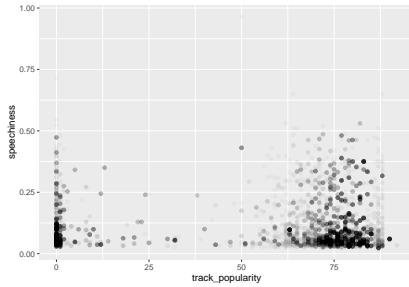
```
[1] "track_popularity and energy"
```



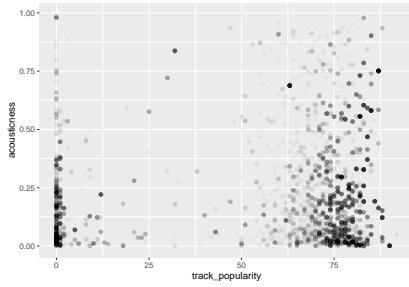
```
[1] "track_popularity and loudness"
```



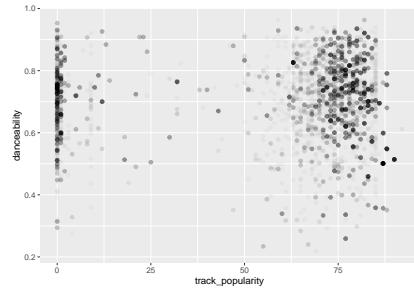
```
[1] "track_popularity and speechiness"
```



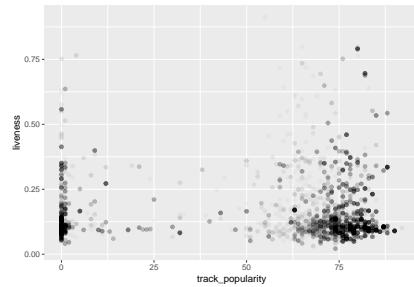
```
[1] "track_popularity and acousticness"
```



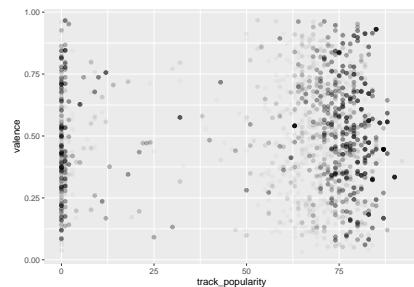
[1] "track\_popularity and danceability"



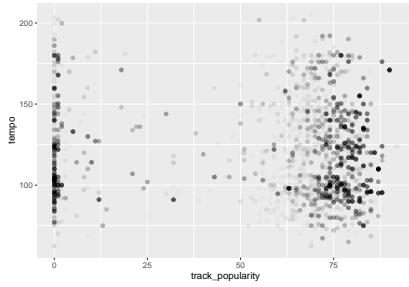
[1] "track\_popularity and liveness"



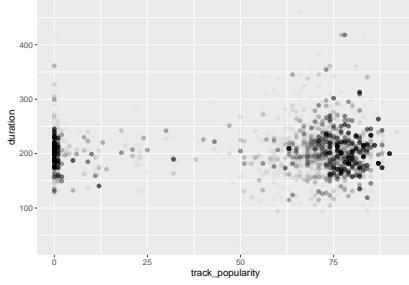
[1] "track\_popularity and valence"



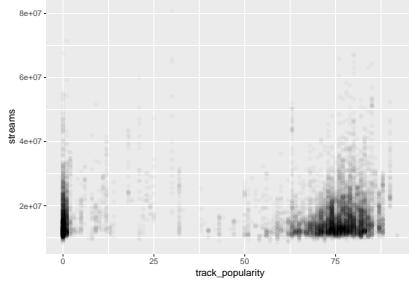
[1] "track\_popularity and tempo"



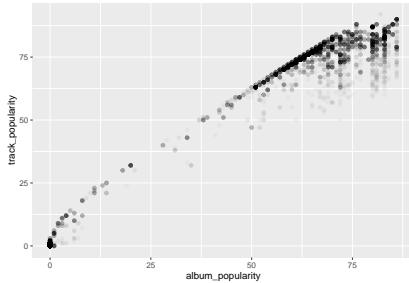
[1] "track\_popularity and duration"



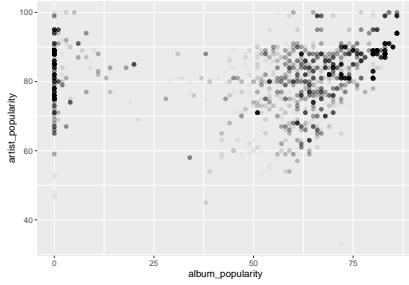
[1] "track\_popularity and streams"



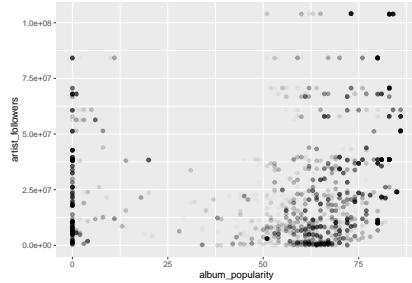
[1] "album\_popularity and track\_popularity"



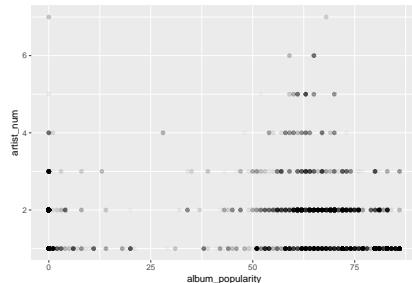
[1] "album\_popularity and artist\_popularity"



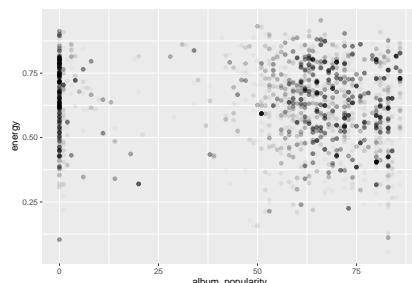
[1] "album\_popularity and artist\_followers"



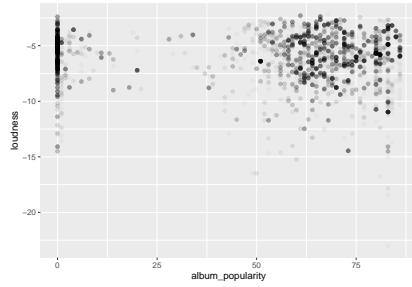
[1] "album\_popularity and artist\_num"



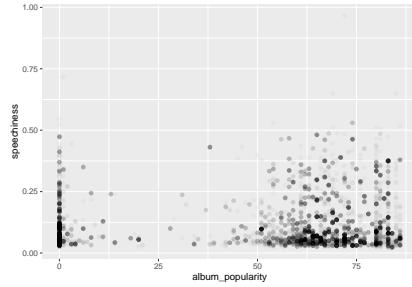
[1] "album\_popularity and energy"



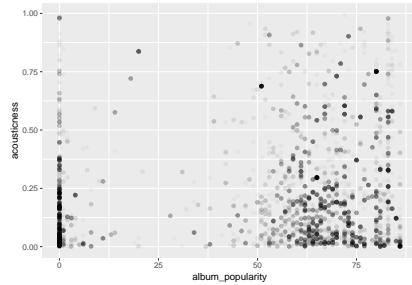
[1] "album\_popularity and loudness"



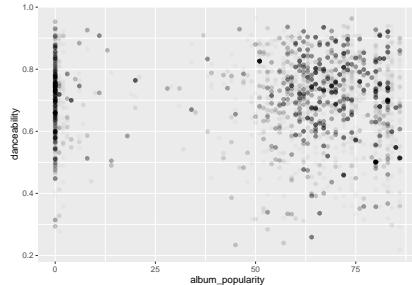
[1] "album\_popularity and speechiness"



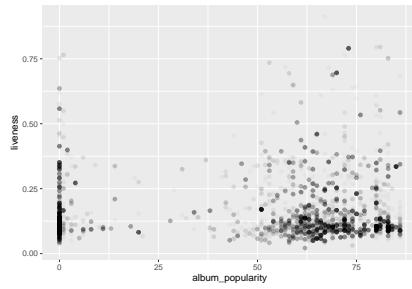
[1] "album\_popularity and acousticness"



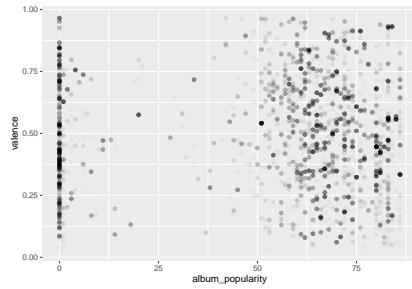
[1] "album\_popularity and danceability"



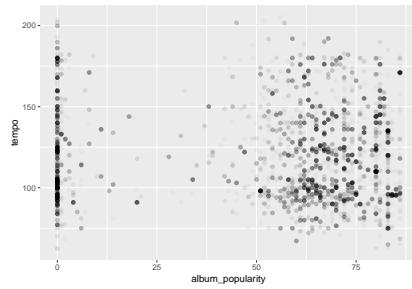
[1] "album\_popularity and liveness"



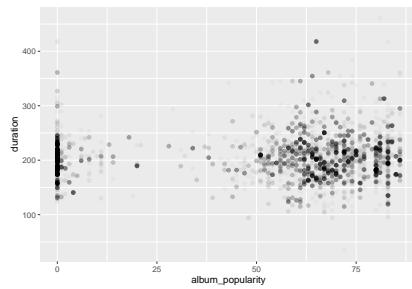
[1] "album\_popularity and valence"



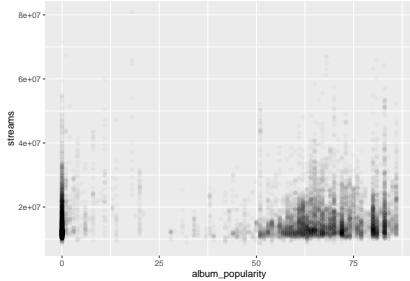
[1] "album\_popularity and tempo"



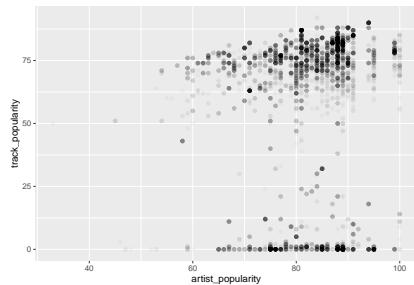
[1] "album\_popularity and duration"



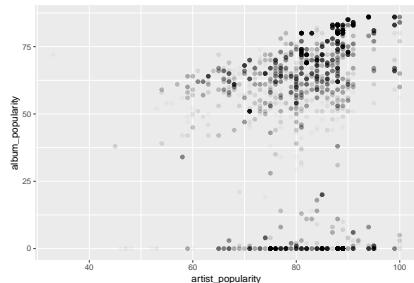
[1] "album\_popularity and streams"



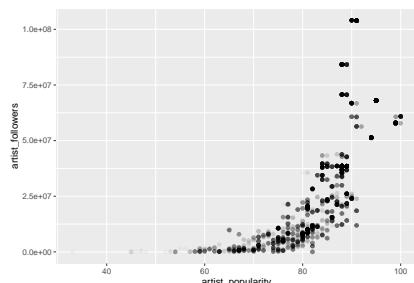
```
[1] "artist_popularity and track_popularity"
```



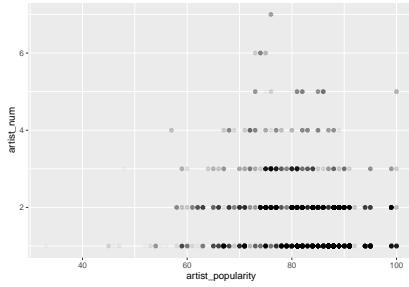
```
[1] "artist_popularity and album_popularity"
```



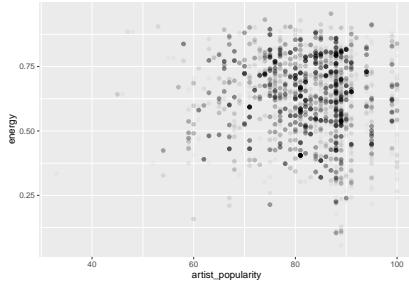
```
[1] "artist_popularity and artist_followers"
```



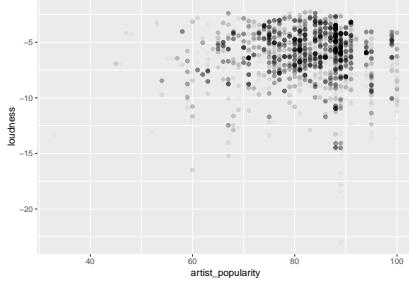
```
[1] "artist_popularity and artist_num"
```



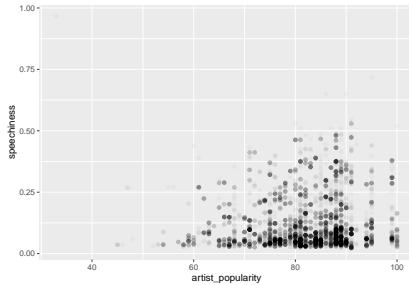
[1] "artist\_popularity and energy"



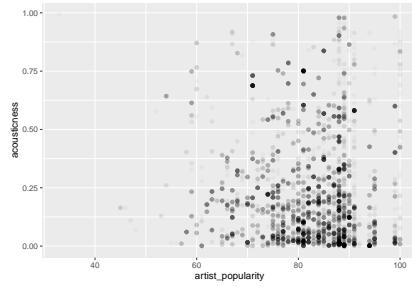
[1] "artist\_popularity and loudness"



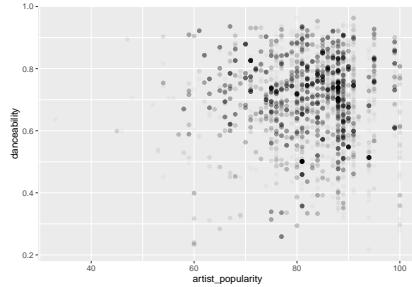
[1] "artist\_popularity and speechiness"



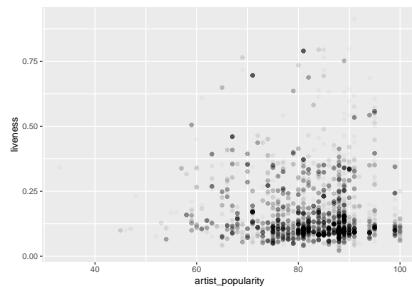
[1] "artist\_popularity and acousticness"



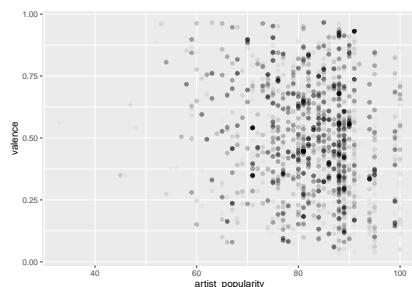
[1] "artist\_popularity and danceability"



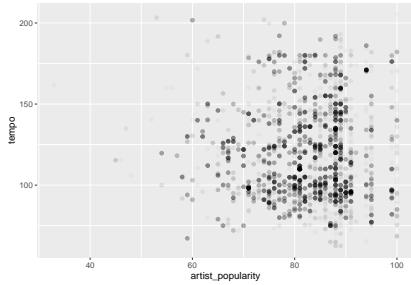
[1] "artist\_popularity and liveness"



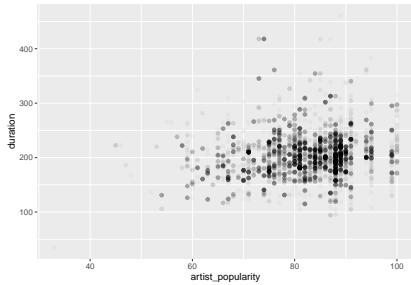
[1] "artist\_popularity and valence"



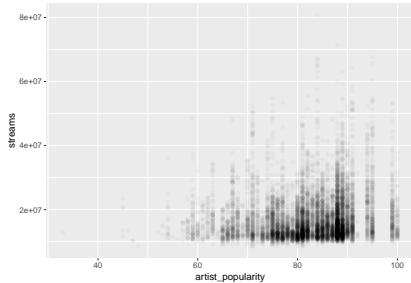
[1] "artist\_popularity and tempo"



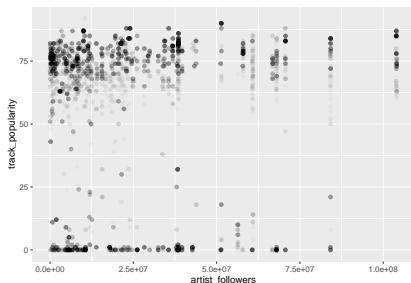
[1] "artist\_popularity and duration"



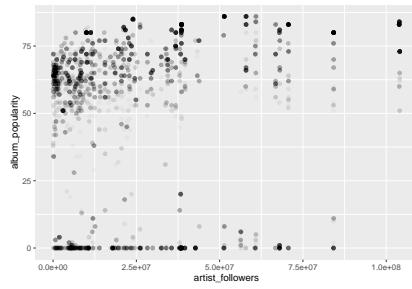
[1] "artist\_popularity and streams"



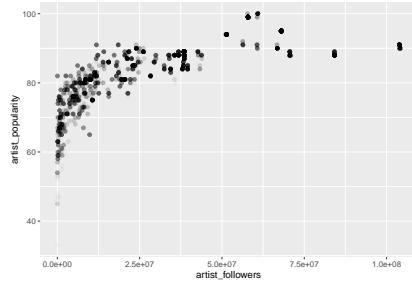
[1] "artist\_followers and track\_popularity"



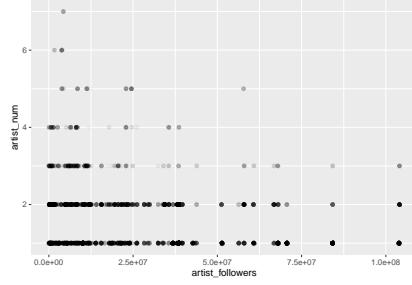
[1] "artist\_followers and album\_popularity"



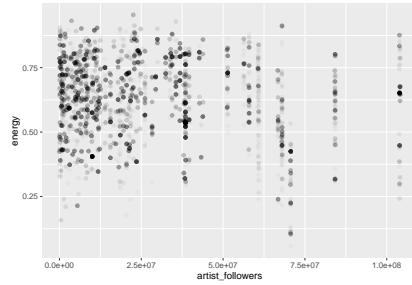
[1] "artist\_followers and artist\_popularity"



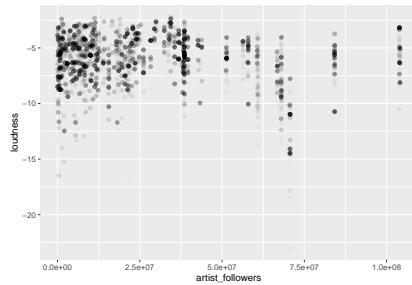
[1] "artist\_followers and artist\_num"



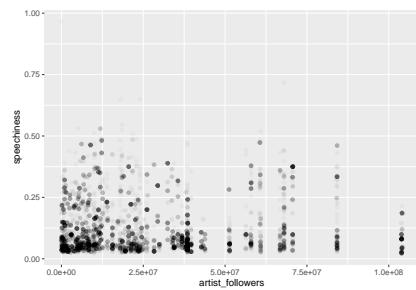
[1] "artist\_followers and energy"



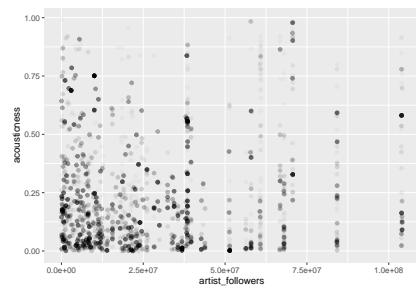
[1] "artist\_followers and loudness"



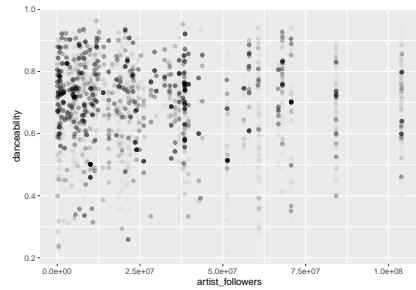
[1] "artist\_followers and speechiness"



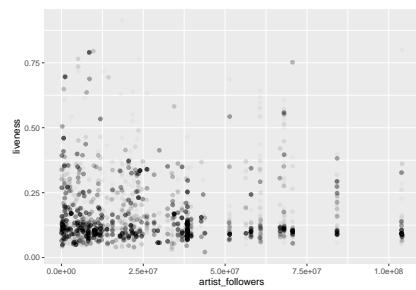
[1] "artist\_followers and acousticness"



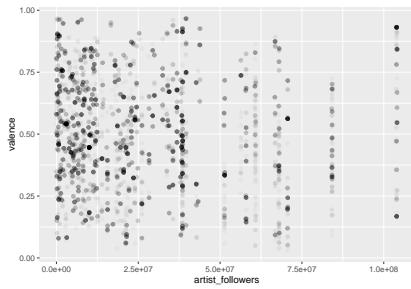
[1] "artist\_followers and danceability"



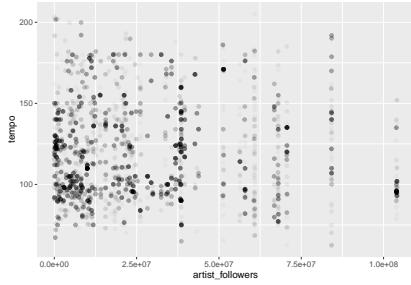
[1] "artist\_followers and liveness"



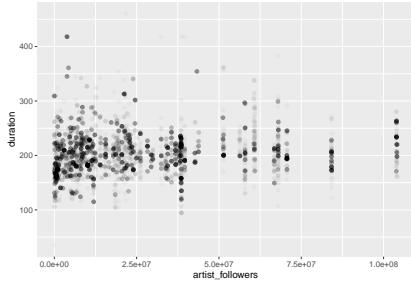
[1] "artist\_followers and valence"



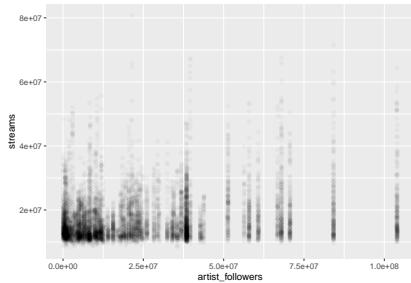
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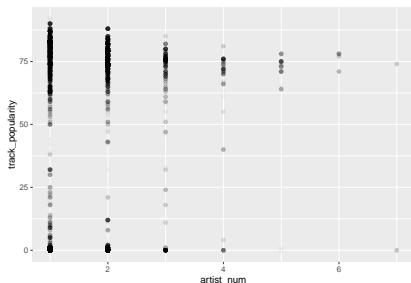
[1] "artist\_followers and duration"



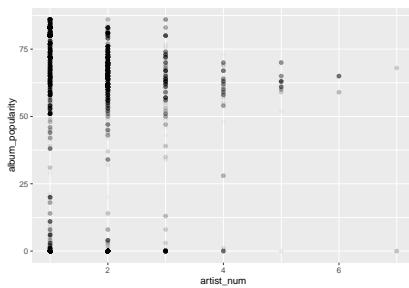
[1] "artist\_followers and streams"



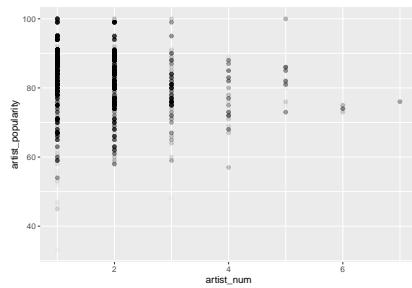
[1] "artist\_num and track\_popularity"



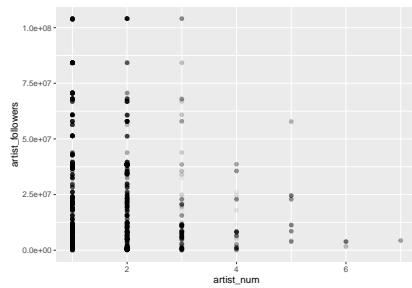
[1] "artist\_num and album\_popularity"



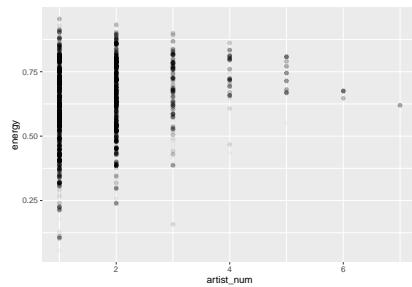
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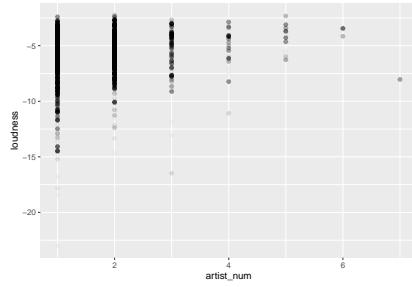
[1] "artist\_num and artist\_followers"



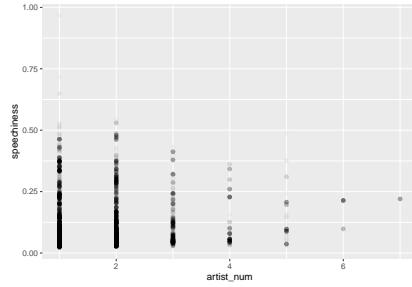
[1] "artist\_num and energy"



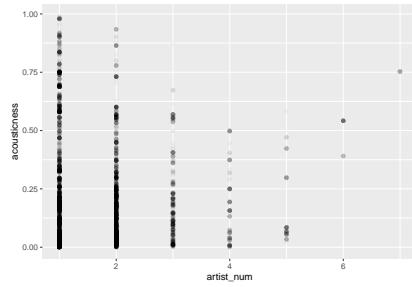
[1] "artist\_num and loudness"



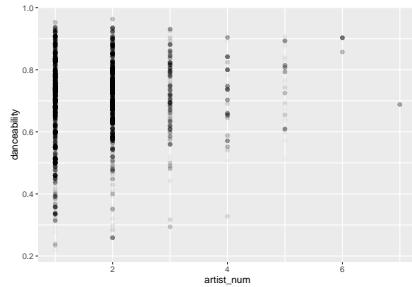
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[1] "artist_num and speechiness"
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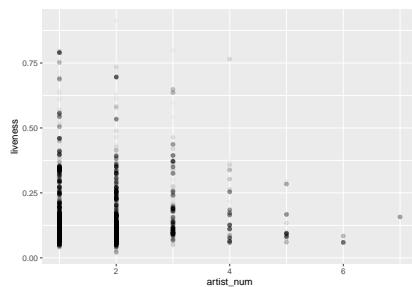
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[1] "artist_num and acousticness"
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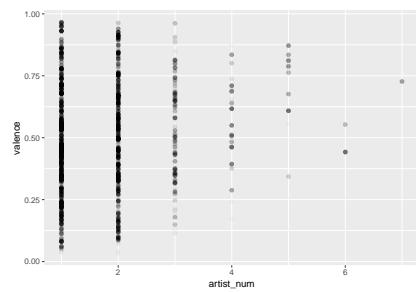
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[1] "artist_num and danceability"
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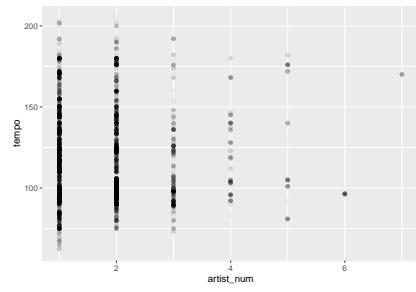
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[1] "artist_num and liveness"
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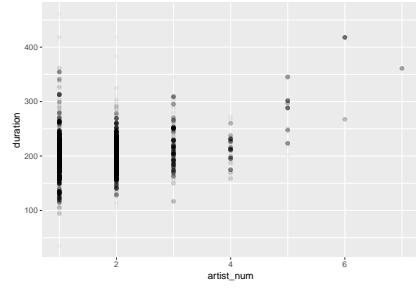
[1] "artist\_num and valence"



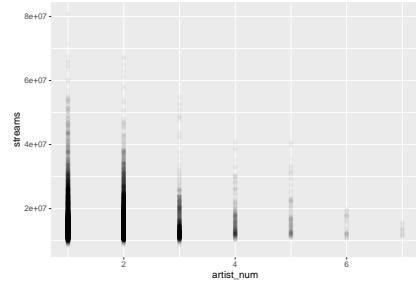
[1] "artist\_num and tempo"



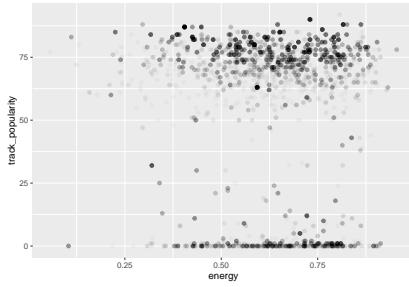
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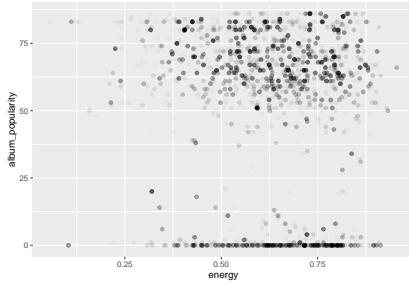
[1] "artist\_num and streams"



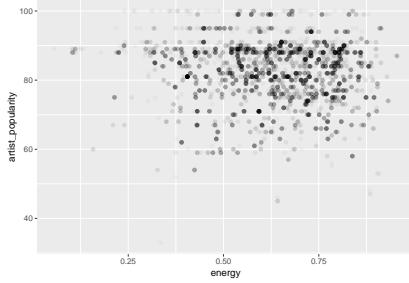
[1] "energy and track\_popularity"



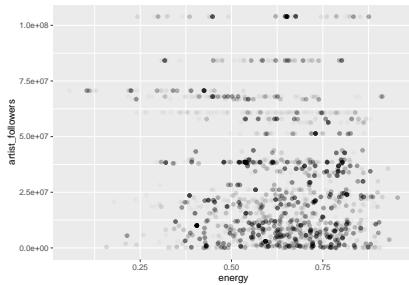
[1] "energy and album\_popularity"



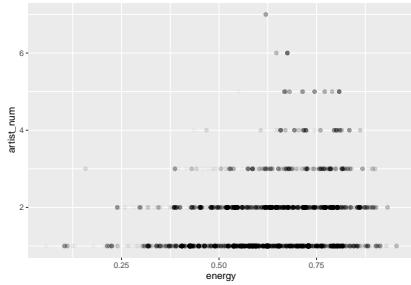
[1] "energy and artist\_popularity"



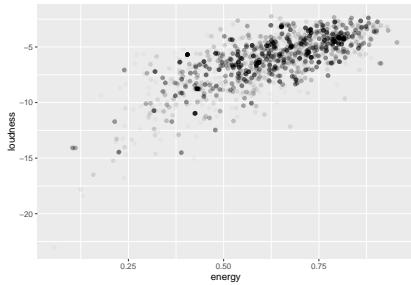
[1] "energy and artist\_followers"



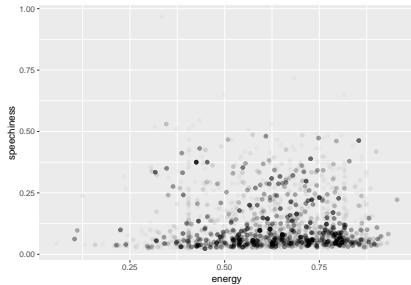
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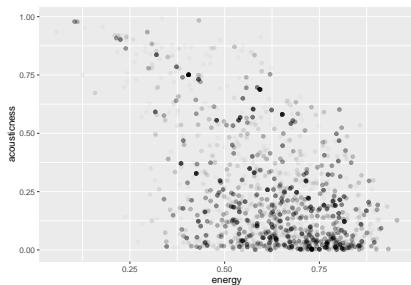
[1] "energy and loudness"



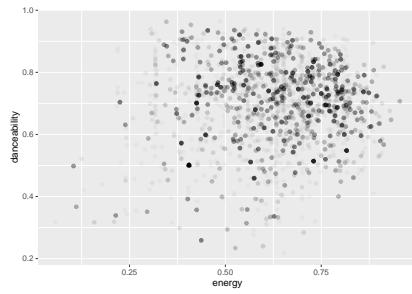
[1] "energy and speechiness"



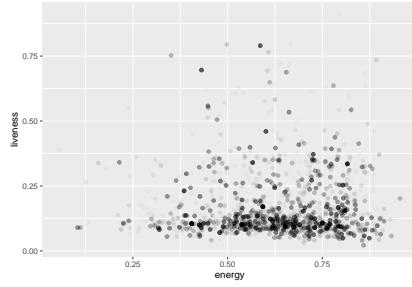
[1] "energy and acousticness"



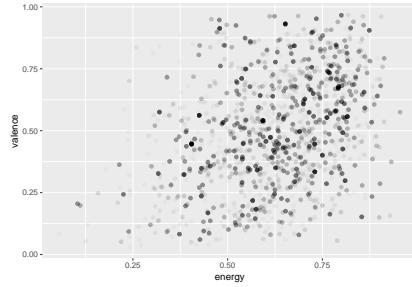
[1] "energy and danceability"



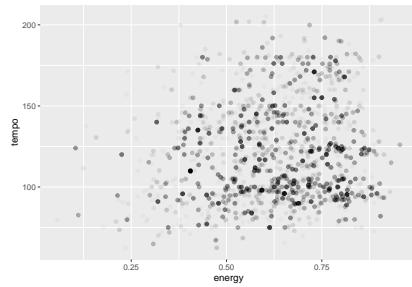
[1] "energy and liveness"



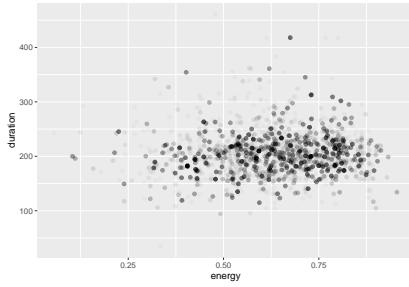
[1] "energy and valence"



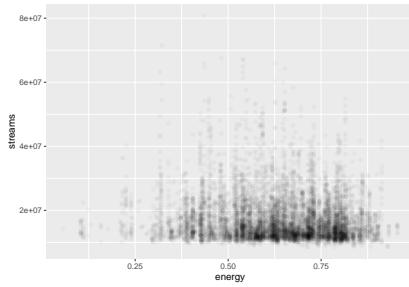
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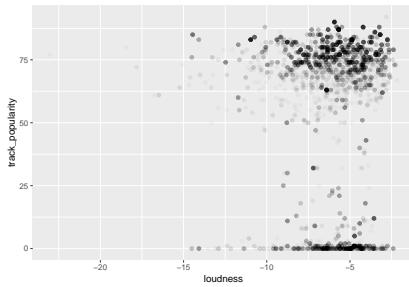
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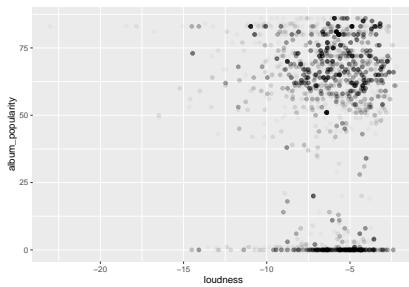
[1] "energy and streams"



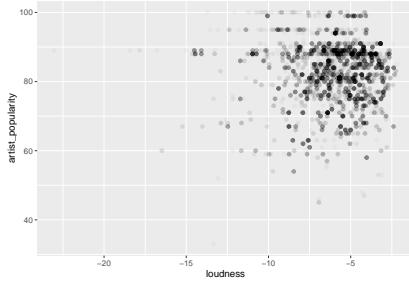
[1] "loudness and track\_popularity"



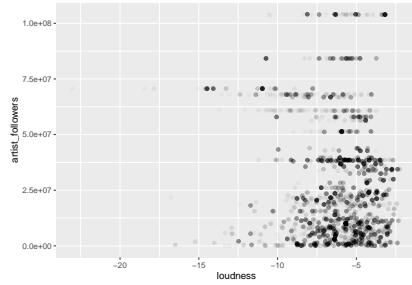
[1] "loudness and album\_popularity"



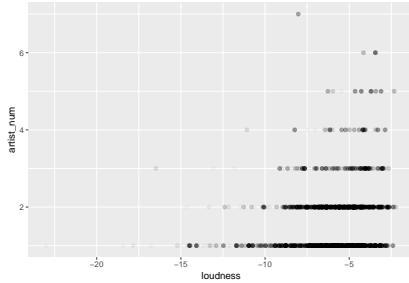
[1] "loudness and artist\_popularity"



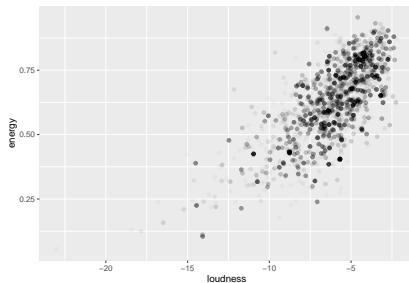
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[1] "loudness and artist_followers"
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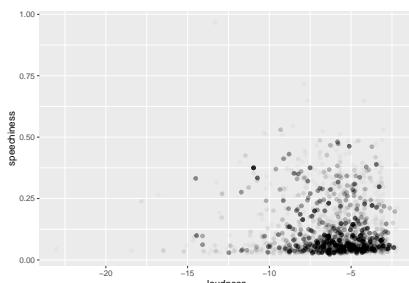
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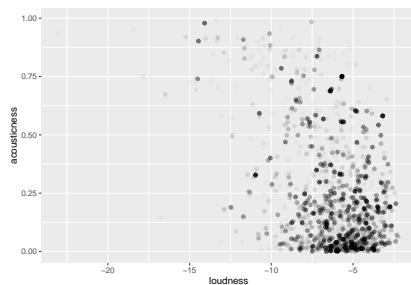
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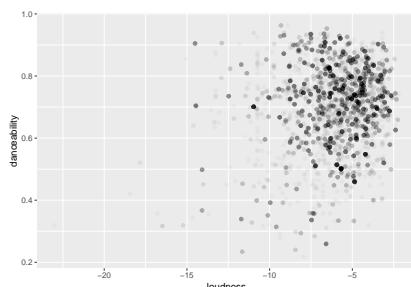
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[1] "loudness and speechiness"
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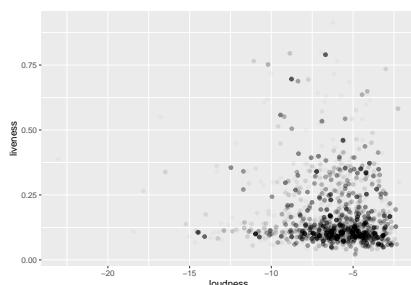
[1] "loudness and acousticness"



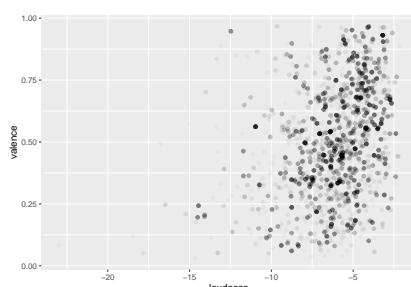
[1] "loudness and danceability"



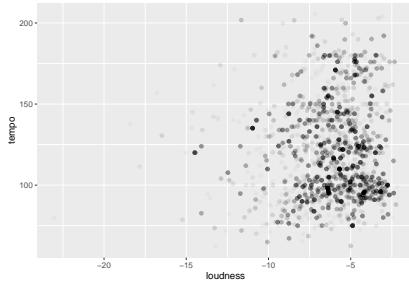
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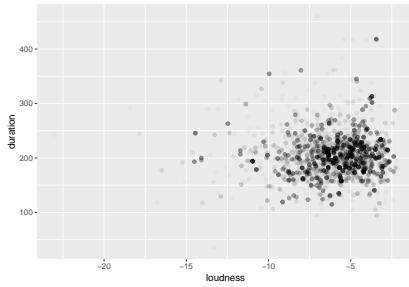
[1] "loudness and valence"



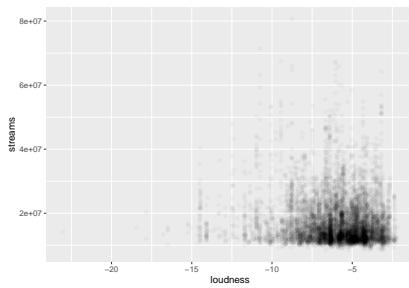
[1] "loudness and tempo"



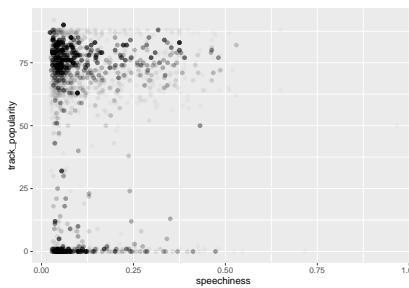
[1] "loudness and duration"



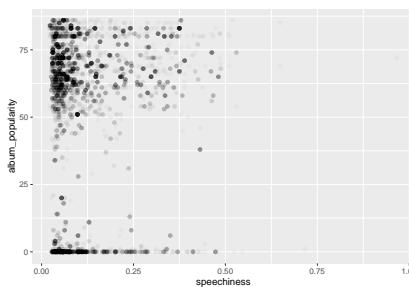
[1] "loudness and streams"



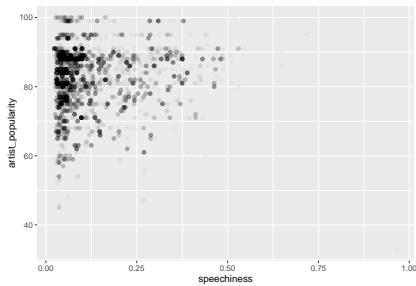
[1] "speechiness and track\_popularity"



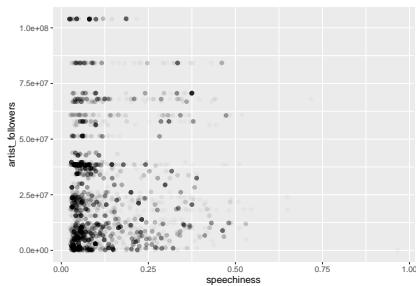
[1] "speechiness and album\_popularity"



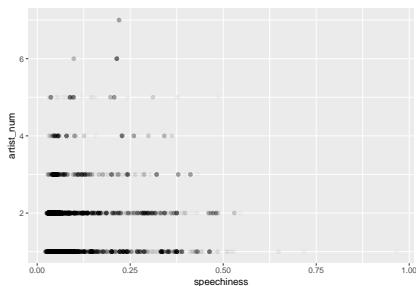
[1] "speechiness and artist\_popularity"



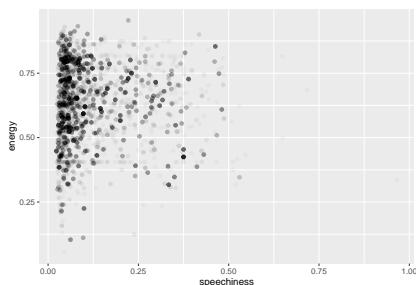
[1] "speechiness and artist\_followers"



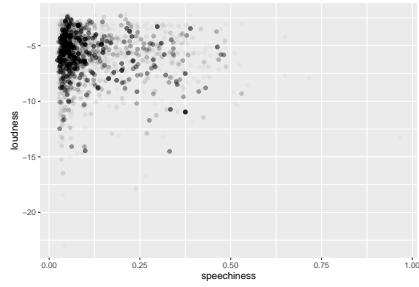
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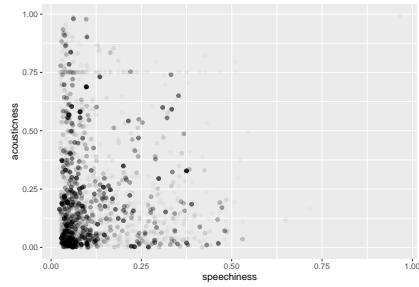
[1] "speechiness and energy"



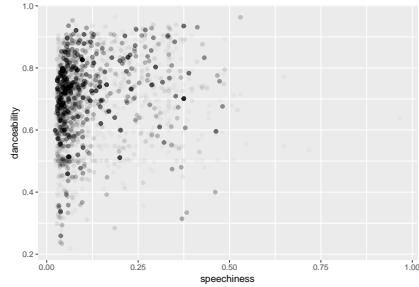
[1] "speechiness and loudness"



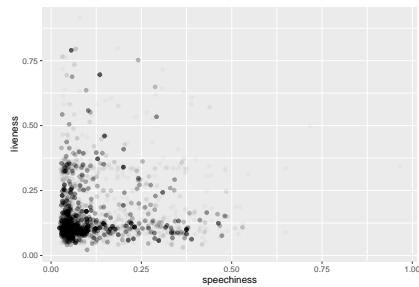
[1] "speechiness and acousticness"



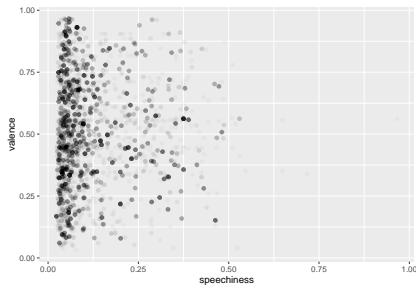
[1] "speechiness and danceability"



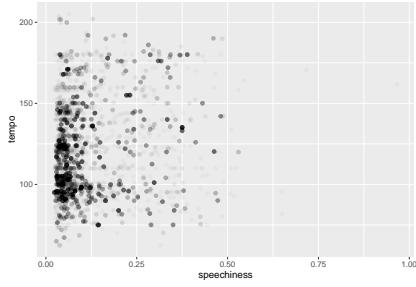
[1] "speechiness and liveness"



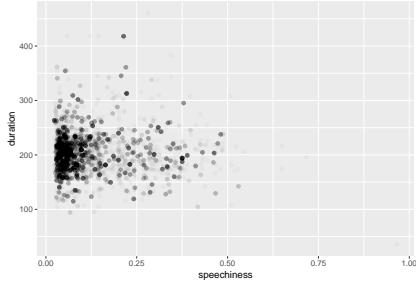
[1] "speechiness and valence"



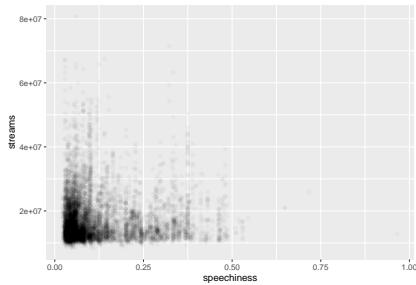
[1] "speechiness and tempo"



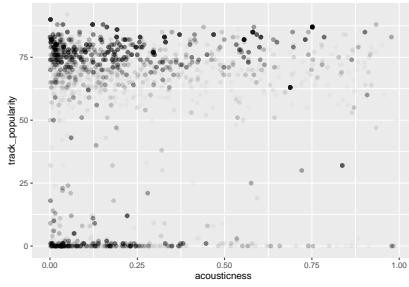
[1] "speechiness and duration"



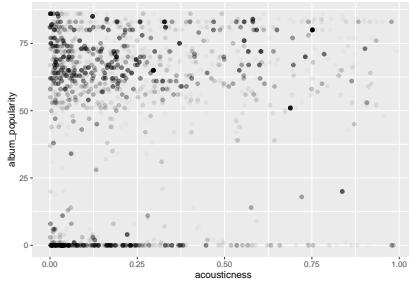
[1] "speechiness and streams"



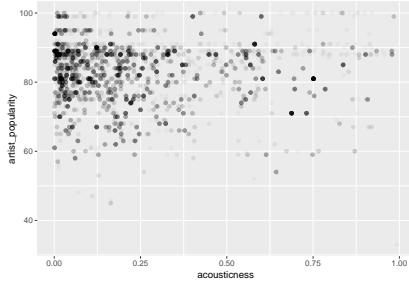
[1] "acousticness and track\_popularity"



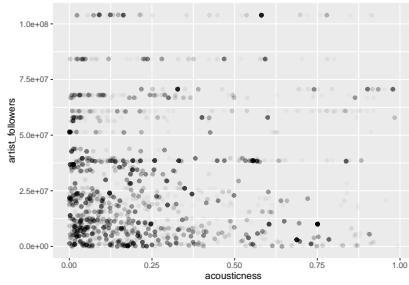
[1] "acousticness and album\_popularity"



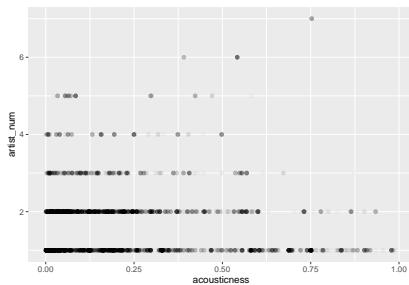
[1] "acousticness and artist\_popularity"



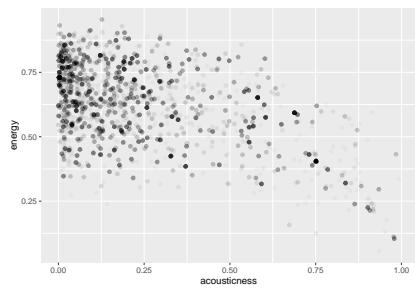
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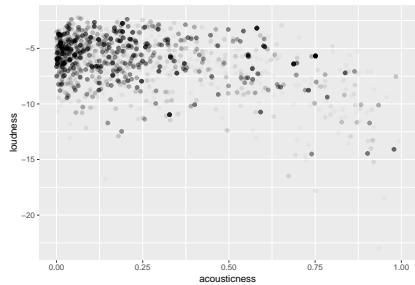
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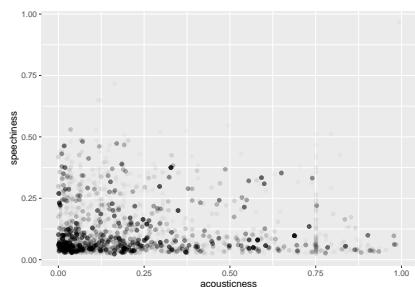
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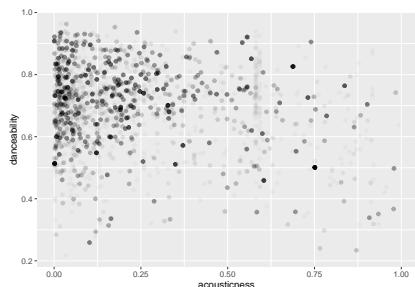
[1] "acousticness and loudness"



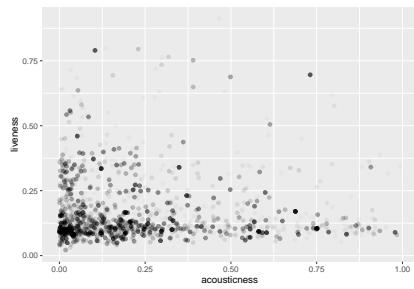
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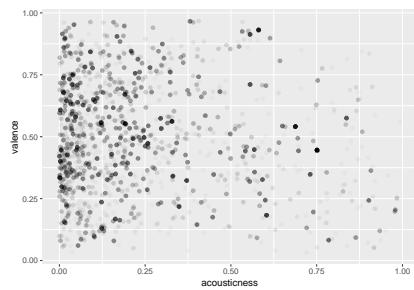
[1] "acousticness and danceability"



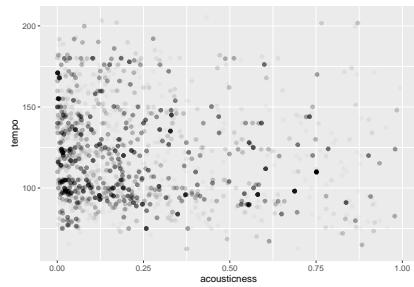
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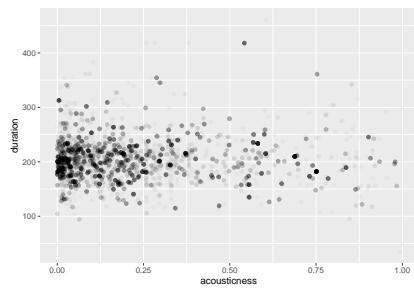
[1] "acousticness and valence"



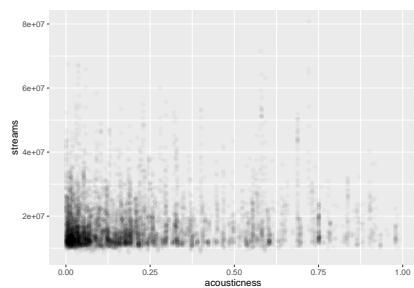
[1] "acousticness and tempo"



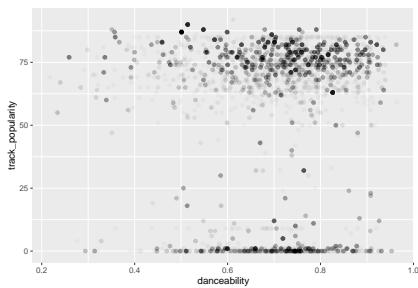
[1] "acousticness and duration"



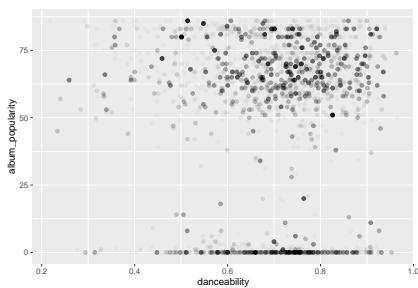
[1] "acousticness and streams"



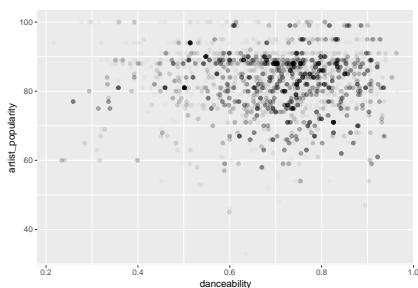
[1] "danceability and track\_popularity"



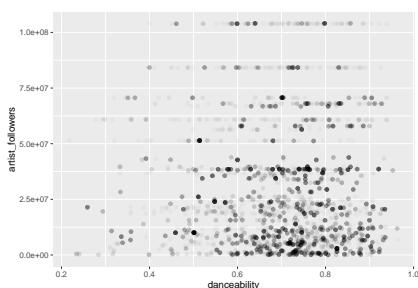
[1] "danceability and album\_popularity"



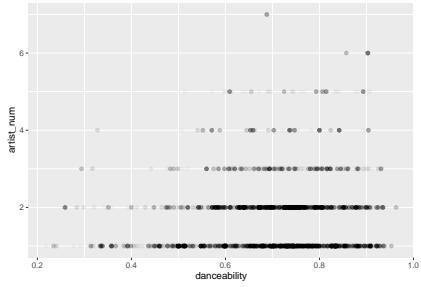
[1] "danceability and artist\_popularity"



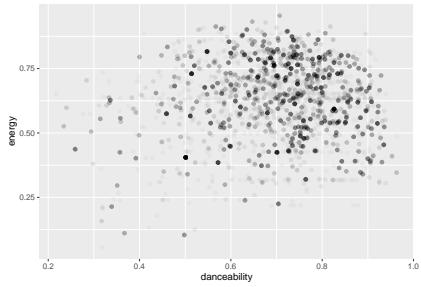
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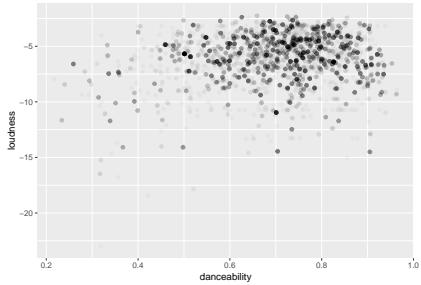
[1] "danceability and artist\_num"



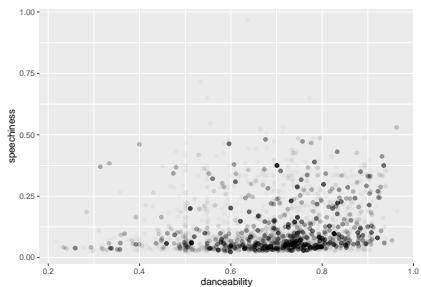
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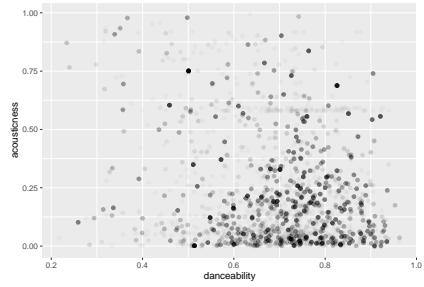
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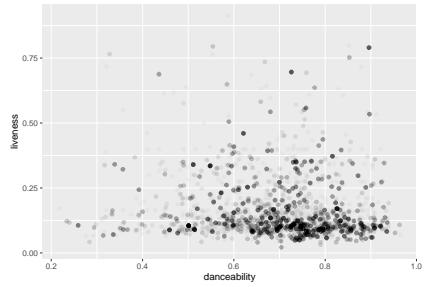
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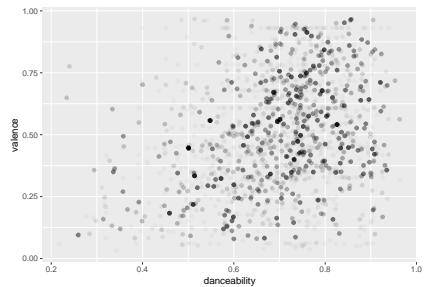
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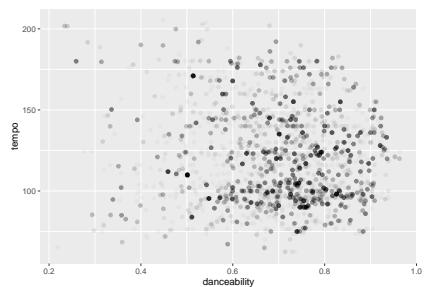
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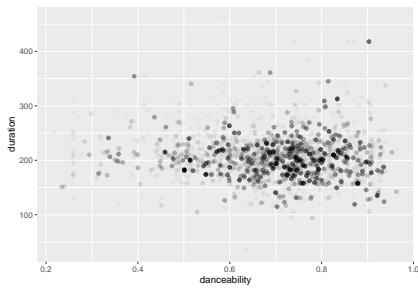
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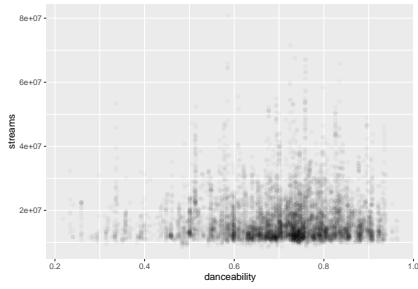
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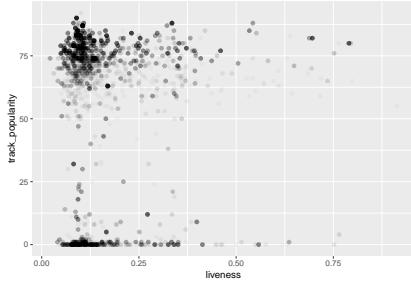
[1] "danceability and duration"



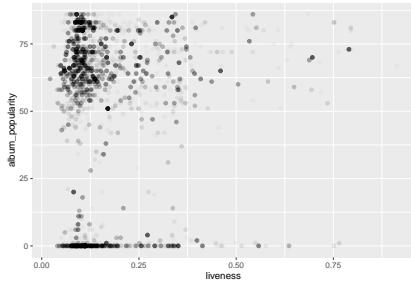
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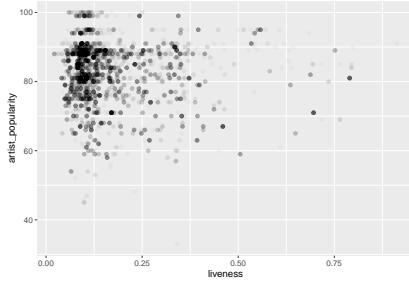
[1] "liveness and track\_popularity"



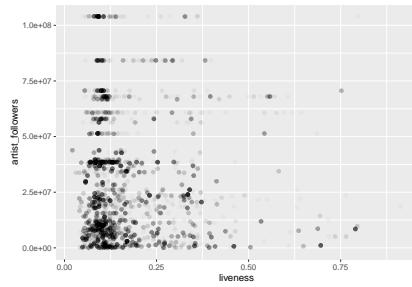
[1] "liveness and album\_popularity"



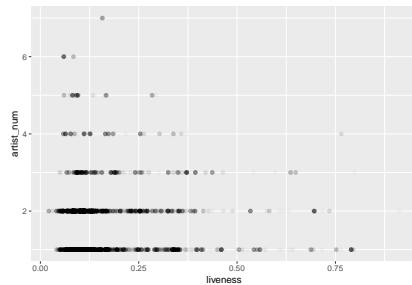
[1] "liveness and artist\_popularity"



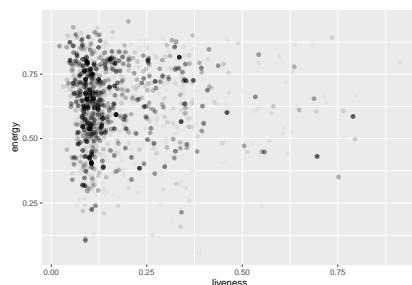
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[1] "liveness and artist_followers"
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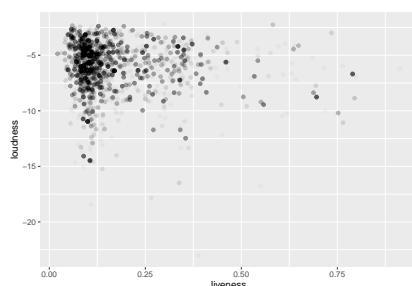
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[1] "liveness and artist_num"
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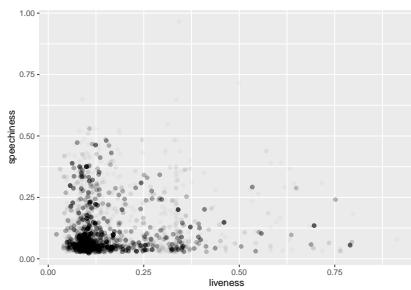
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[1] "liveness and energy"
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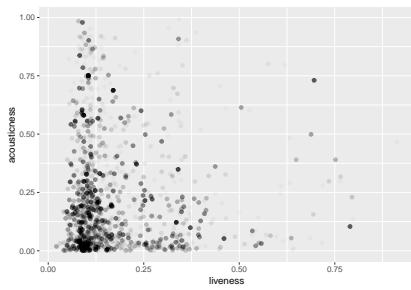
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[1] "liveness and loudness"
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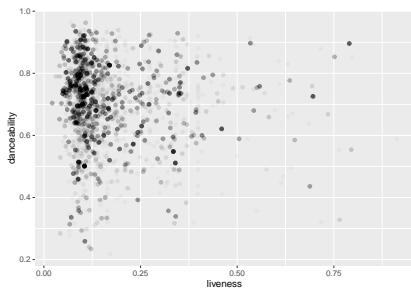
[1] "liveness and speechiness"



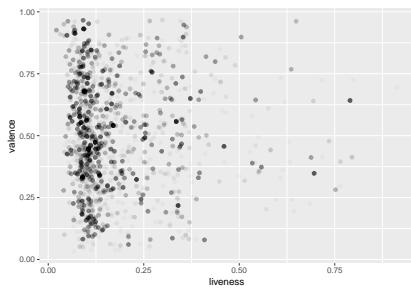
[1] "liveness and acousticness"



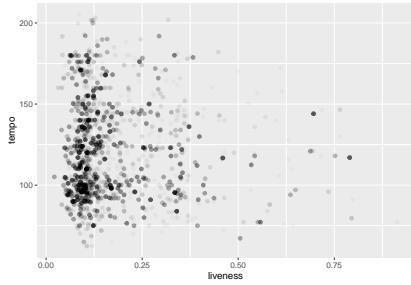
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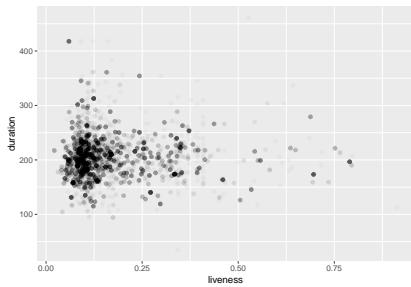
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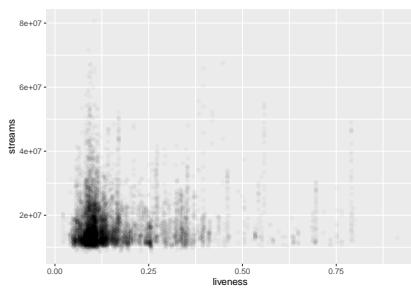
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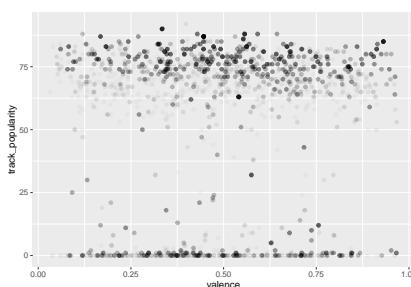
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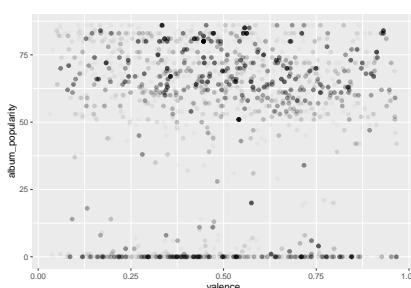
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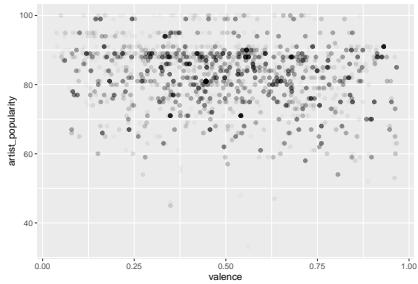
[1] "valence and track\_popularity"



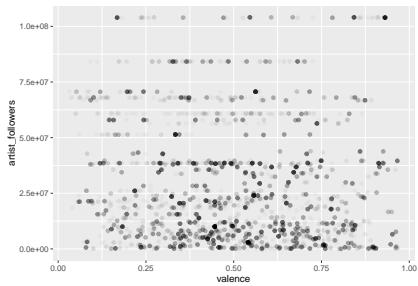
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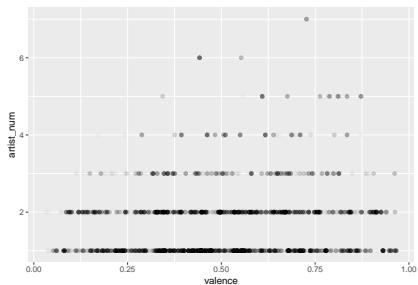
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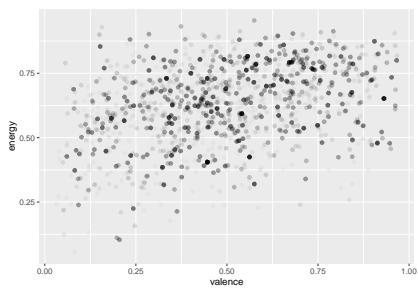
[1] "valence and artist\_followers"



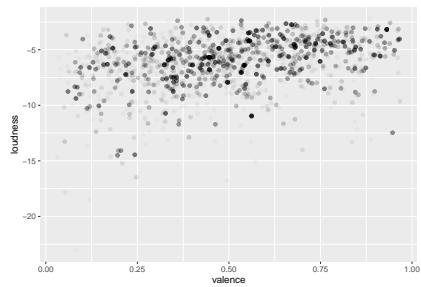
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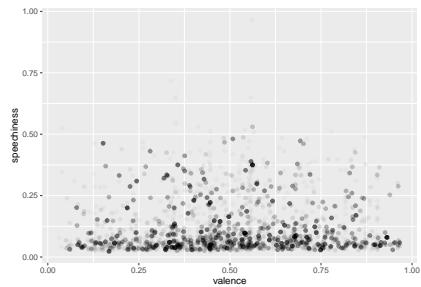
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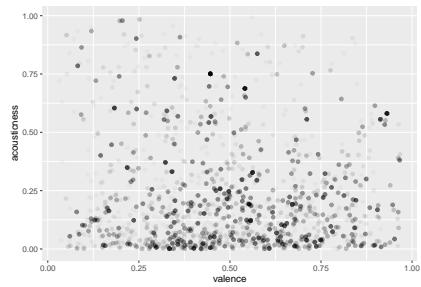
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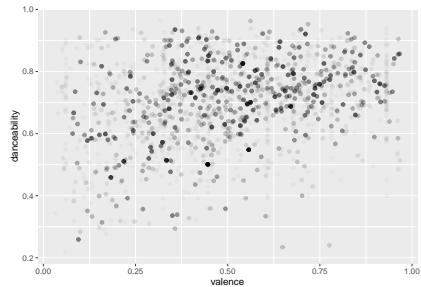
[1] "valence and speechiness"



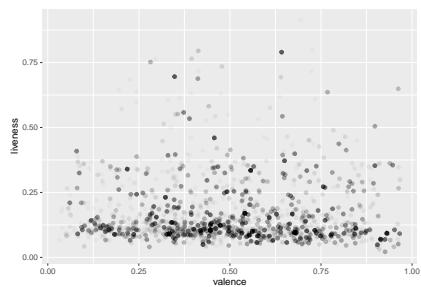
[1] "valence and acousticness"



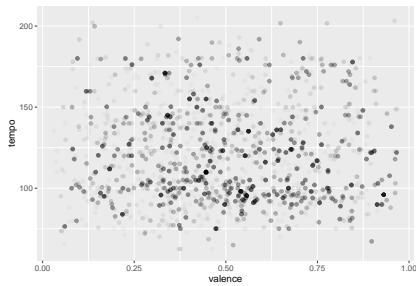
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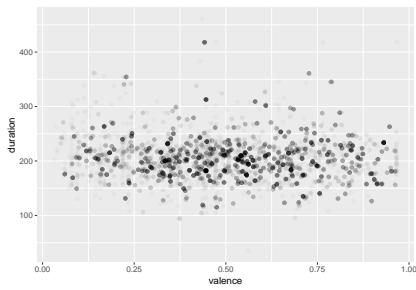
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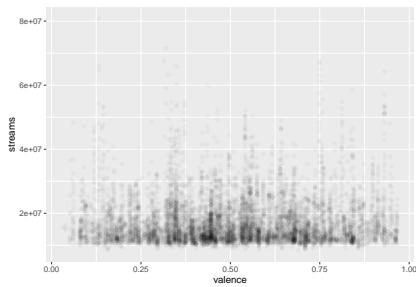
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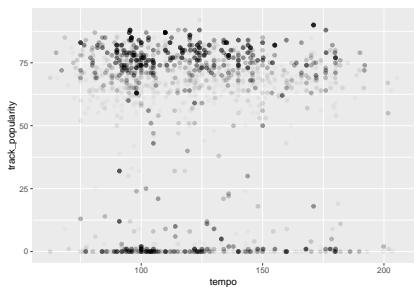
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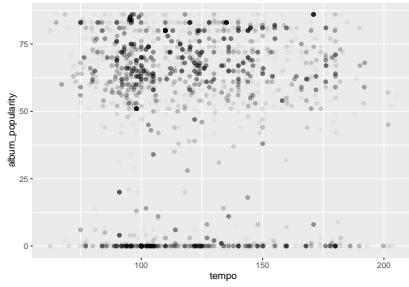
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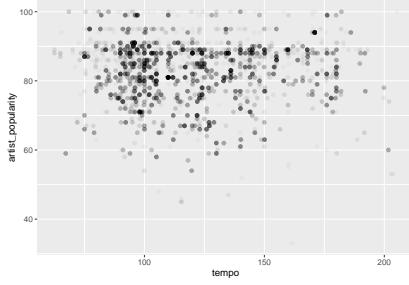
[1] "tempo and track\_popularity"



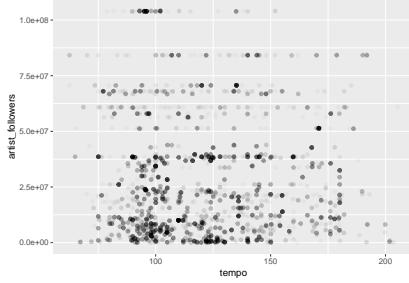
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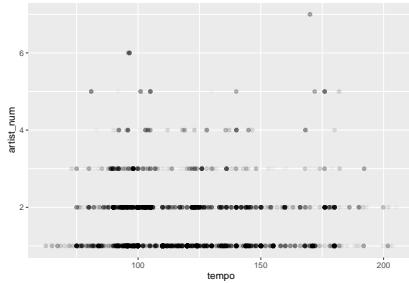
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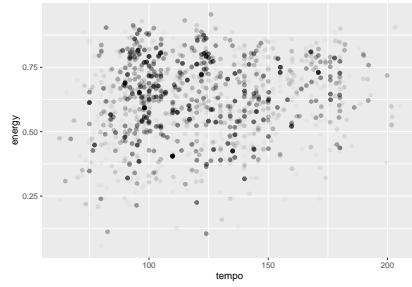
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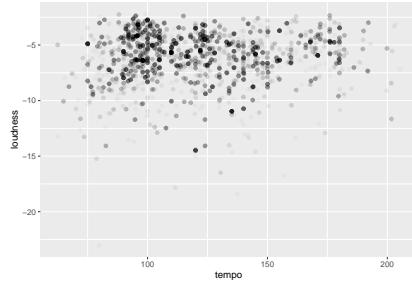
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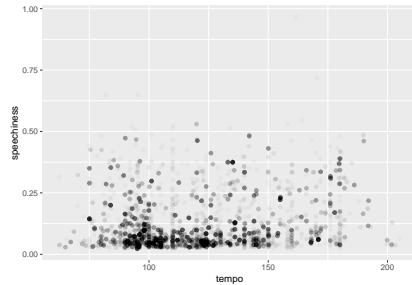
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[1] "tempo and energy"
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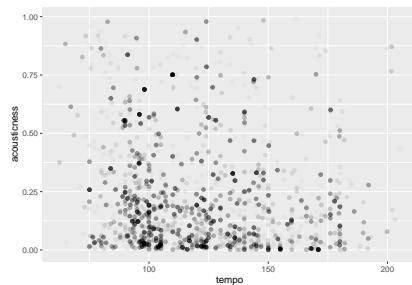
[1] "tempo and loudness"



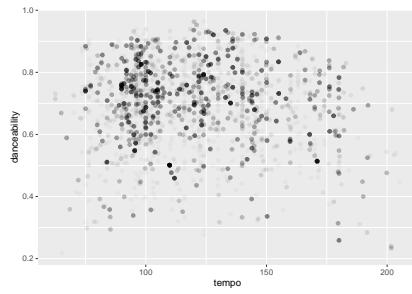
[1] "tempo and speechiness"



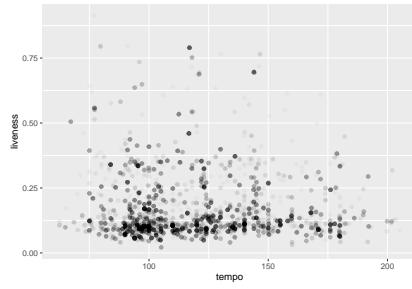
[1] "tempo and acousticness"



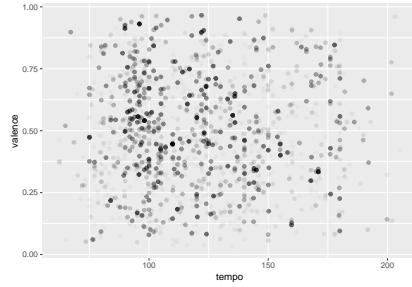
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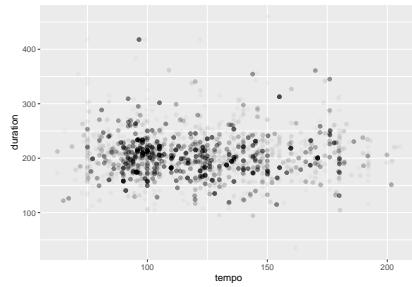
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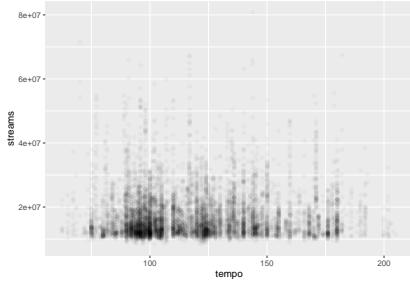
[1] "tempo and valence"



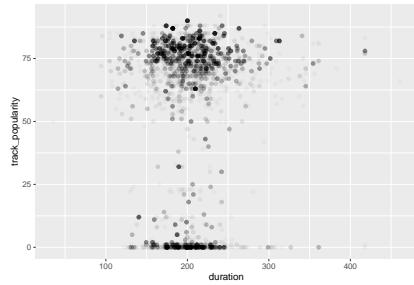
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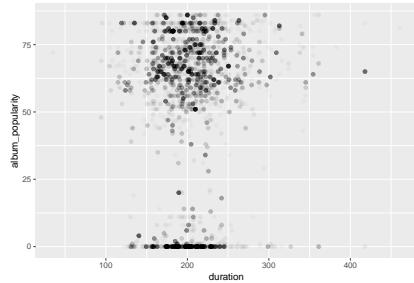
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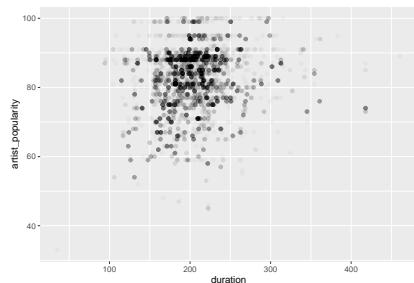
[1] "duration and track\_popularity"



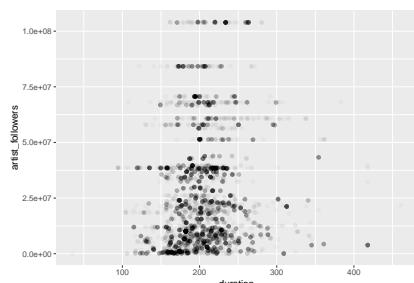
[1] "duration and album\_popularity"



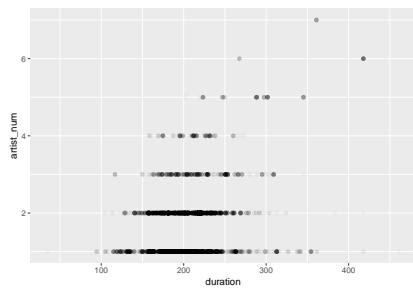
[1] "duration and artist\_popularity"



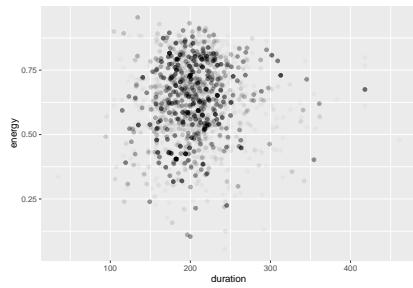
[1] "duration and artist\_followers"



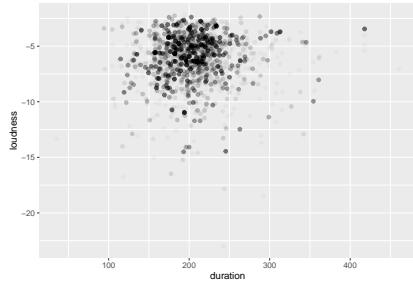
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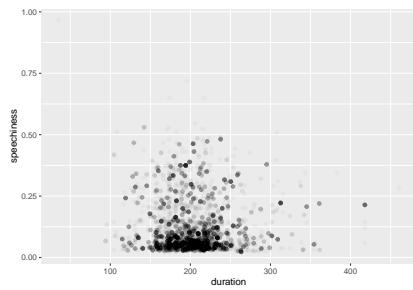
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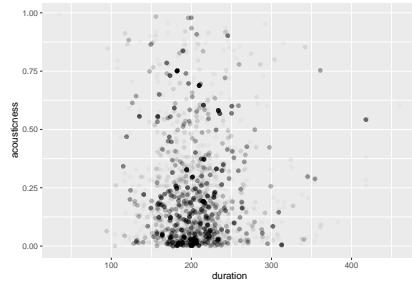
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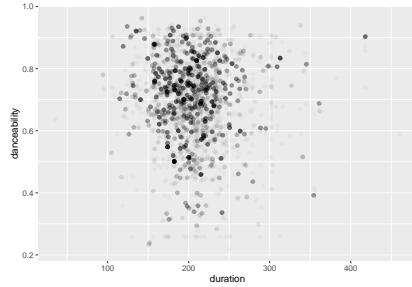
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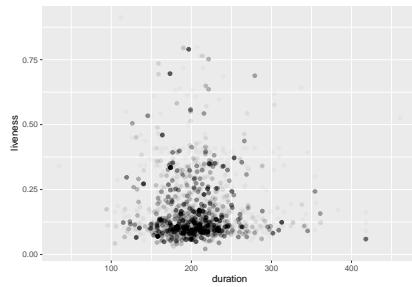
[1] "duration and acousticness"



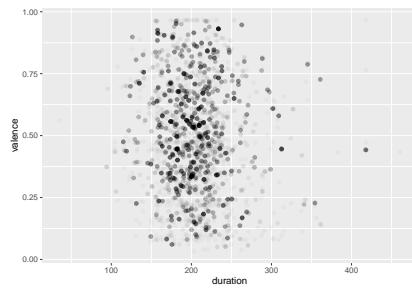
[1] "duration and danceability"



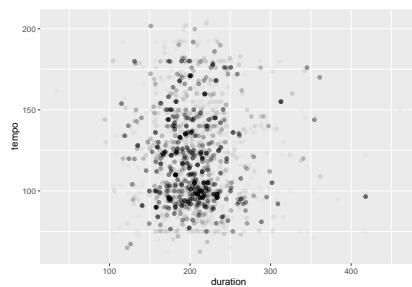
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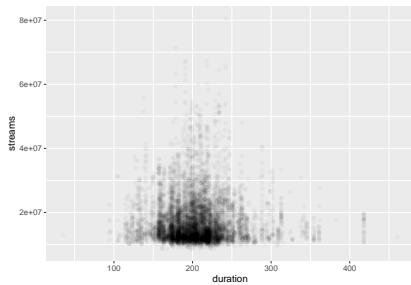
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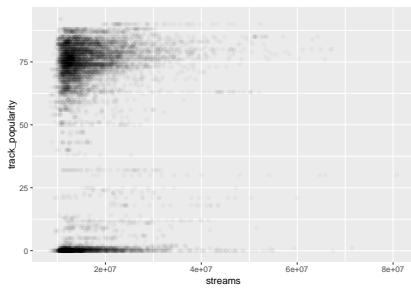
[1] "duration and tempo"



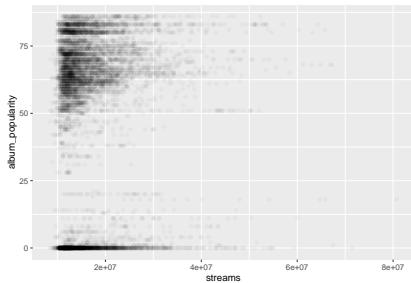
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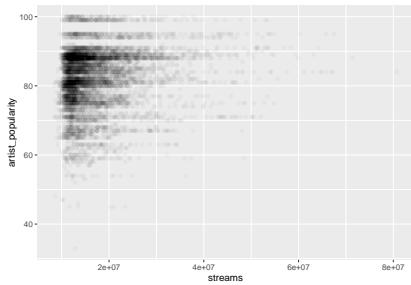
[1] "streams and track\_popularity"



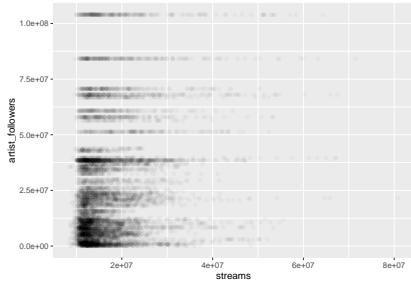
[1] "streams and album\_popularity"



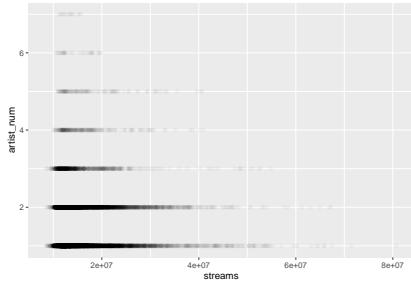
[1] "streams and artist\_popularity"



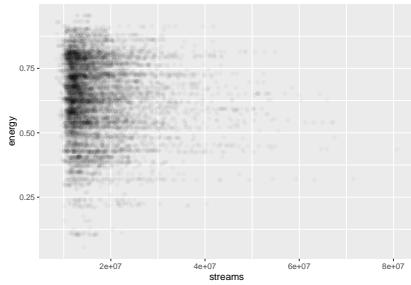
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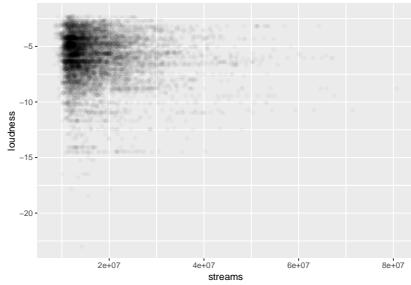
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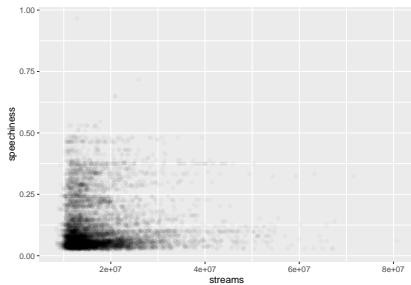
[1] "streams and energy"



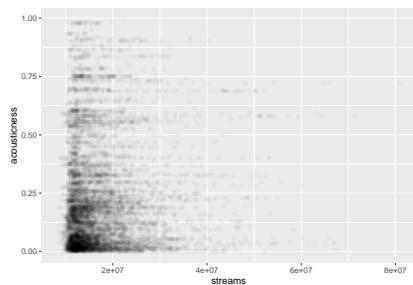
[1] "streams and loudness"



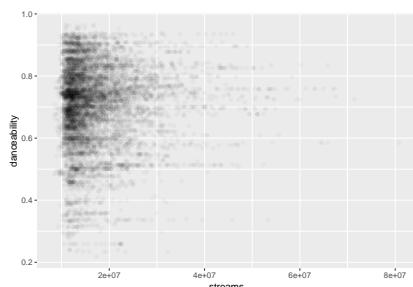
[1] "streams and speechiness"



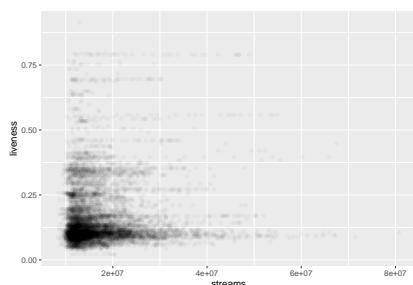
[1] "streams and acousticness"



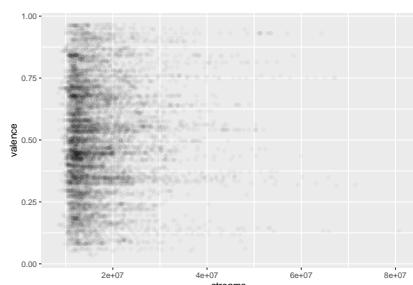
[1] "streams and danceability"



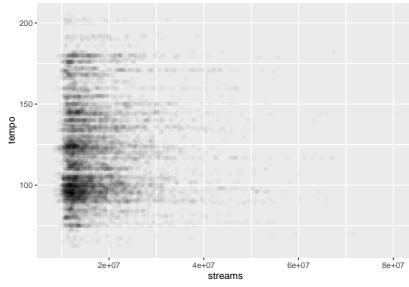
[1] "streams and liveness"



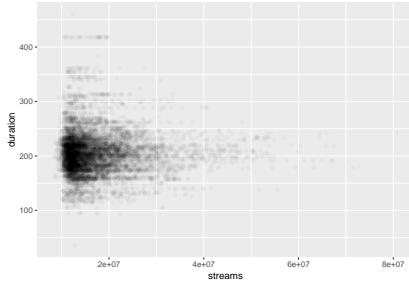
[1] "streams and valence"



[1] "streams and tempo"



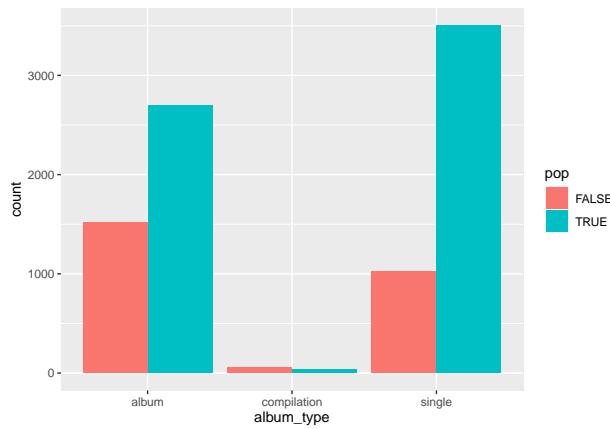
[1] "streams and duration"



### 3. Dues variables categòriques

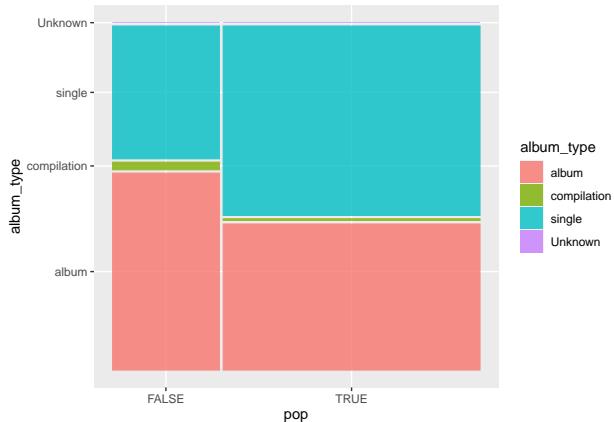
Finalment, es fa un chisquared test per a cada parell de variables categòriques, i també gràfics de barres:

[1] "album\_type and pop"



	FALSE	TRUE
album	1517	2700
compilation	59	35
single	1023	3501
Unknown	0	0

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

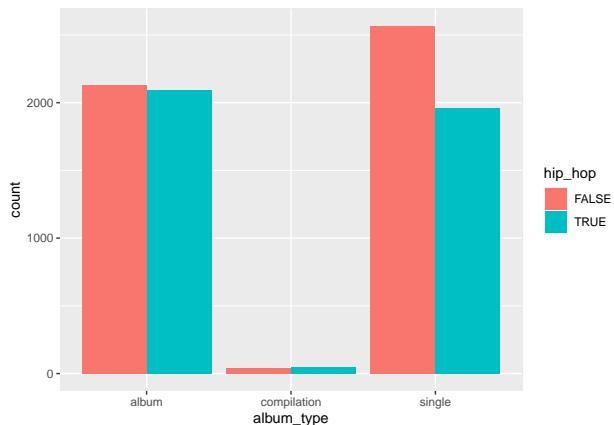


```
[1] "Chi-square test for album_type and pop"
```

Pearson's Chi-squared test

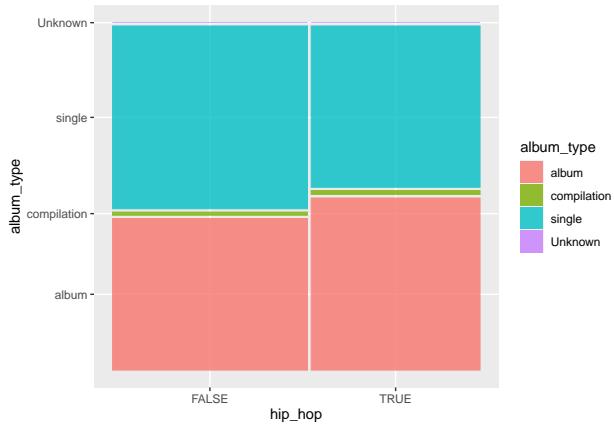
```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 3, p-value = NA
```

```
[1] "album_type and hip_hop"
```



	FALSE	TRUE
album	2127	2090
compilation	44	50
single	2565	1959
Unknown	0	0

```
Warning in chisq.test(table(cat_var1, cat_var2), correct = FALSE): Chi-squared approximation may be incorrect
```

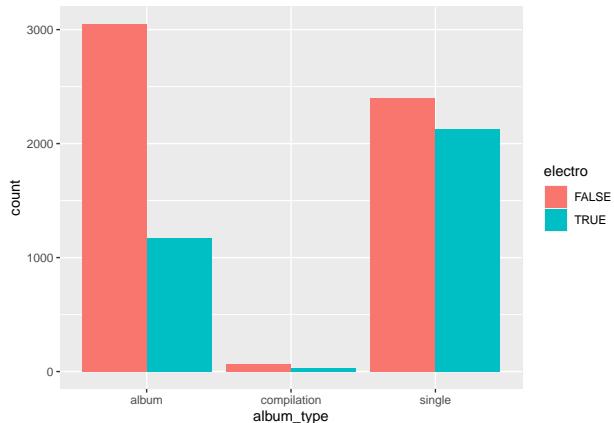


[1] "Chi-square test for album\_type and hip\_hop"

Pearson's Chi-squared test

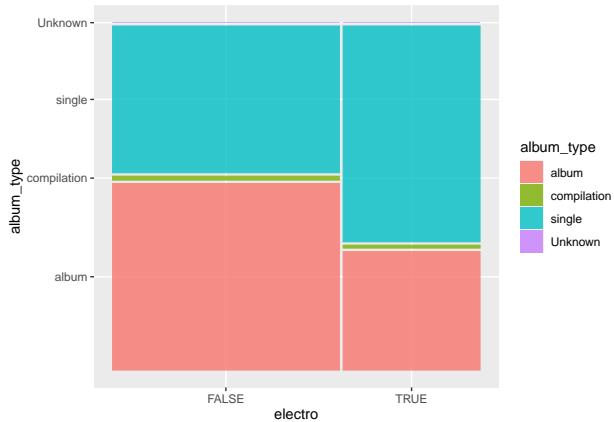
```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 3, p-value = NA
```

[1] "album\_type and electro"



	FALSE	TRUE
album	3048	1169
compilation	65	29
single	2398	2126
Unknown	0	0

```
Warning in chisq.test(table(cat_var1, cat_var2), correct = FALSE): Chi-squared approximation may be incorrect
```

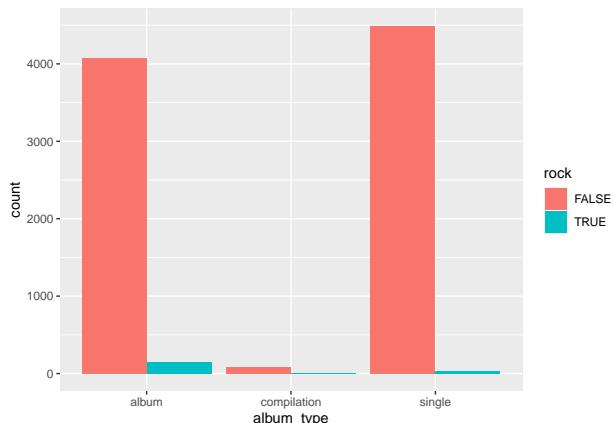


```
[1] "Chi-square test for album_type and electro"
```

Pearson's Chi-squared test

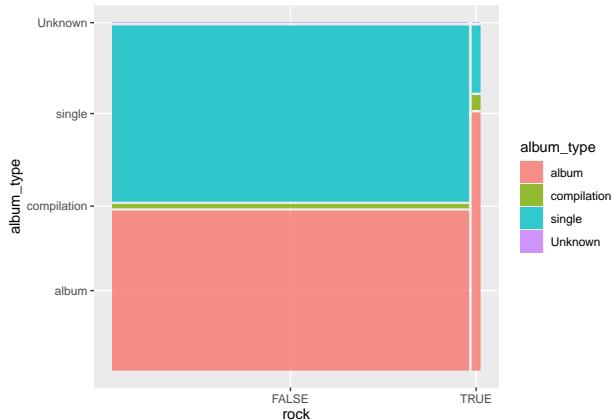
```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 3, p-value = NA
```

```
[1] "album_type and rock"
```



	FALSE	TRUE
album	4073	144
compilation	86	8
single	4487	37
Unknown	0	0

```
Warning in chisq.test(table(cat_var1, cat_var2), correct = FALSE): Chi-squared approximation may be incorrect
```

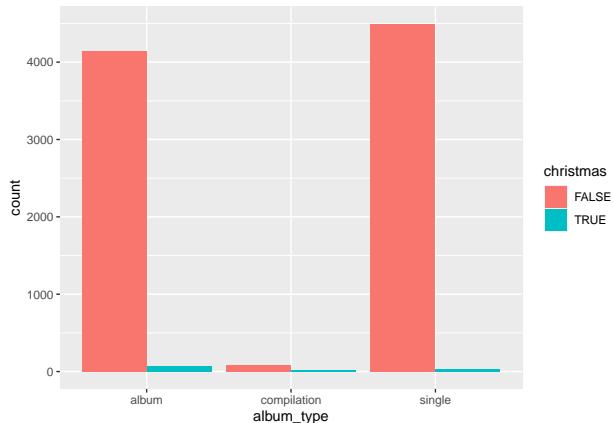


```
[1] "Chi-square test for album_type and rock"
```

Pearson's Chi-squared test

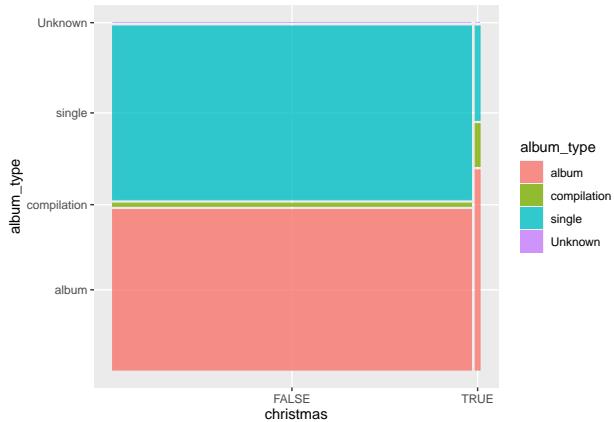
```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 3, p-value = NA
```

```
[1] "album_type and christmas"
```



	FALSE	TRUE
album	4147	70
compilation	79	15
single	4491	33
Unknown	0	0

```
Warning in chisq.test(table(cat_var1, cat_var2), correct = FALSE): Chi-squared approximation may be incorrect
```

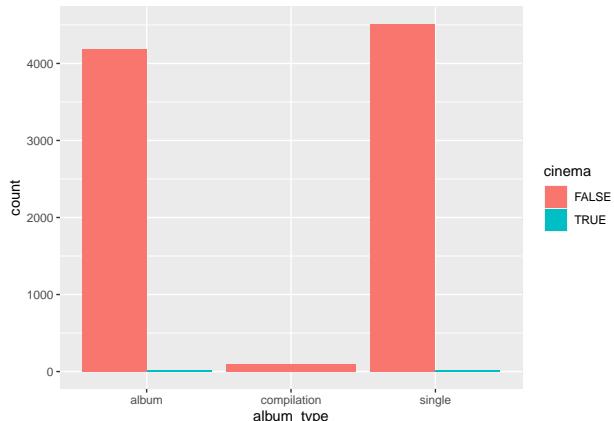


```
[1] "Chi-square test for album_type and christmas"
```

Pearson's Chi-squared test

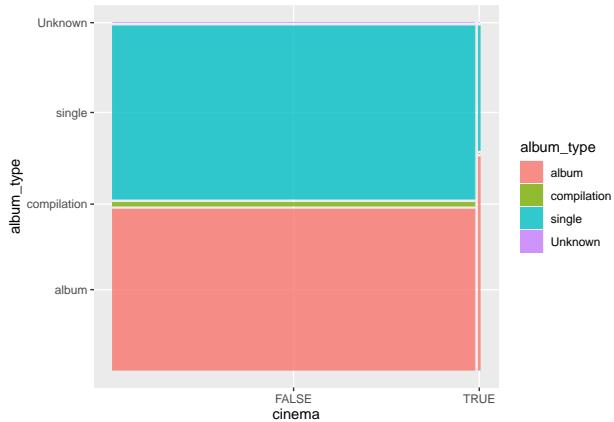
```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 3, p-value = NA
```

```
[1] "album_type and cinema"
```



	FALSE	TRUE
album	4193	24
compilation	94	0
single	4510	14
Unknown	0	0

```
Warning in chisq.test(table(cat_var1, cat_var2), correct = FALSE): Chi-squared approximation may be incorrect
```

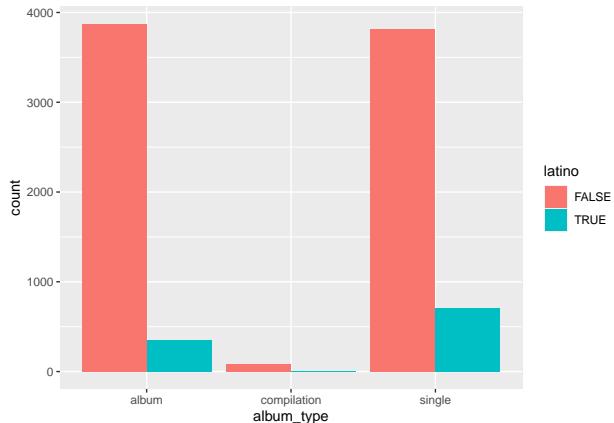


```
[1] "Chi-square test for album_type and cinema"
```

Pearson's Chi-squared test

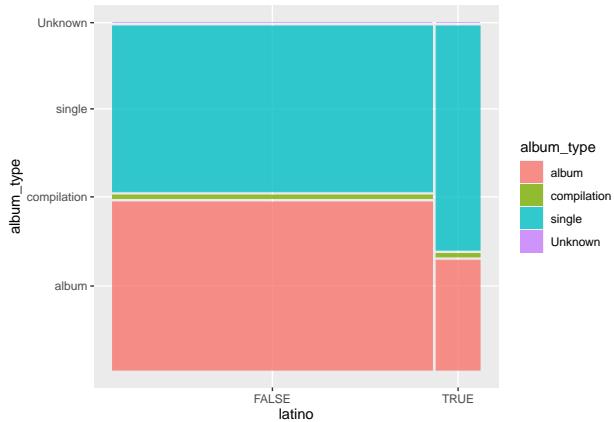
```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 3, p-value = NA
```

```
[1] "album_type and latino"
```



	FALSE	TRUE
album	3870	347
compilation	83	11
single	3816	708
Unknown	0	0

```
Warning in chisq.test(table(cat_var1, cat_var2), correct = FALSE): Chi-squared approximation may be incorrect
```

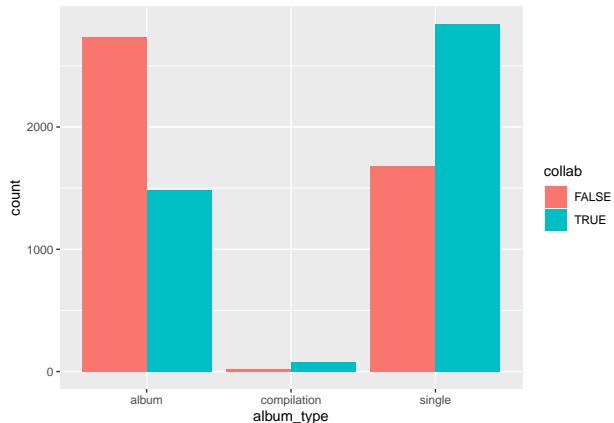


```
[1] "Chi-square test for album_type and latino"
```

Pearson's Chi-squared test

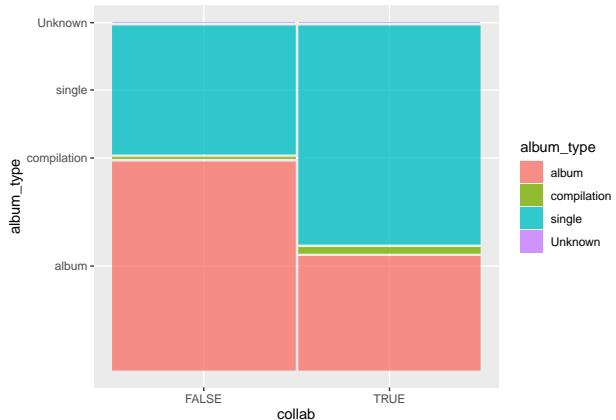
```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 3, p-value = NA
```

```
[1] "album_type and collab"
```



	FALSE	TRUE
album	2736	1481
compilation	19	75
single	1683	2841
Unknown	0	0

```
Warning in chisq.test(table(cat_var1, cat_var2), correct = FALSE): Chi-squared approximation may be incorrect
```

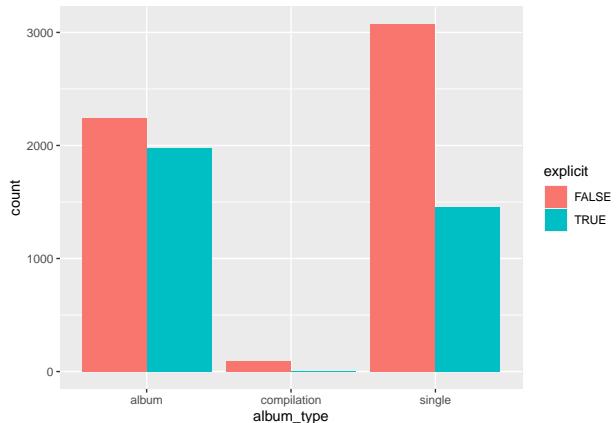


[1] "Chi-square test for album\_type and collab"

Pearson's Chi-squared test

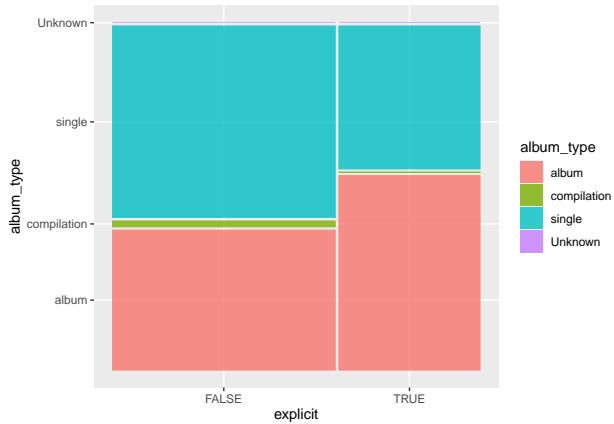
```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 3, p-value = NA
```

[1] "album\_type and explicit"



	FALSE	TRUE
album	2243	1974
compilation	93	1
single	3073	1451
Unknown	0	0

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

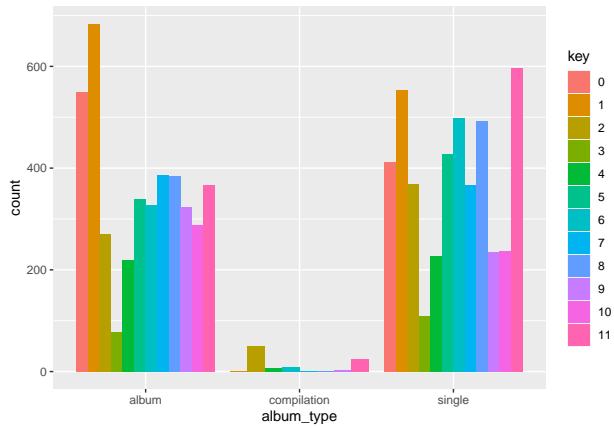


```
[1] "Chi-square test for album_type and explicit"
```

Pearson's Chi-squared test

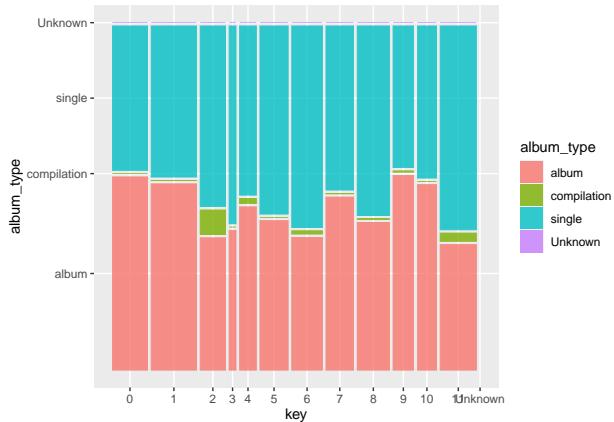
```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 3, p-value = NA
```

```
[1] "album_type and key"
```



	0	1	2	3	4	5	6	7	8	9	10	11	Unknown
album	550	683	270	77	220	340	328	386	384	323	289	367	0
compilation	0	1	50	0	7	0	8	1	1	2	0	24	0
single	4	411	554	369	109	228	428	498	366	493	235	237	596
Unknown	0	0	0	0	0	0	0	0	0	0	0	0	0

```
Warning in chisq.test(table(cat_var1, cat_var2), correct = FALSE): Chi-squared approximation may be incorrect
```

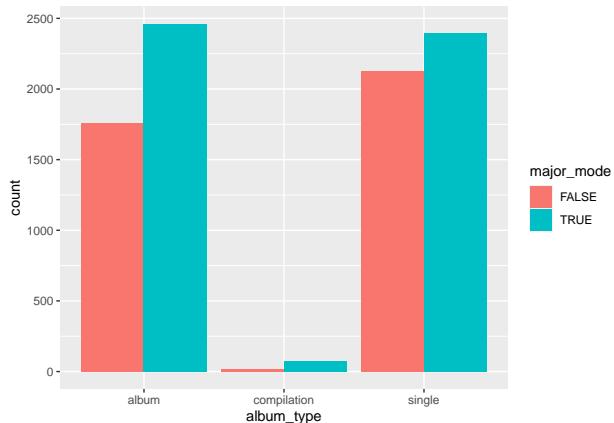


```
[1] "Chi-square test for album_type and key"
```

Pearson's Chi-squared test

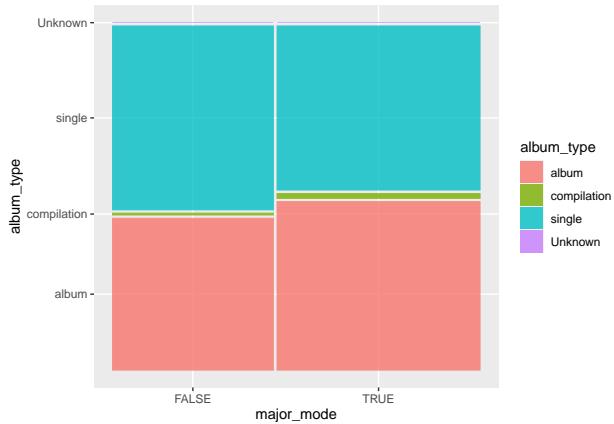
```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 36, p-value = NA
```

```
[1] "album_type and major_mode"
```



	FALSE	TRUE
album	1758	2459
compilation	21	73
single	2129	2395
Unknown	0	0

```
Warning in chisq.test(table(cat_var1, cat_var2), correct = FALSE): Chi-squared approximation may be incorrect
```

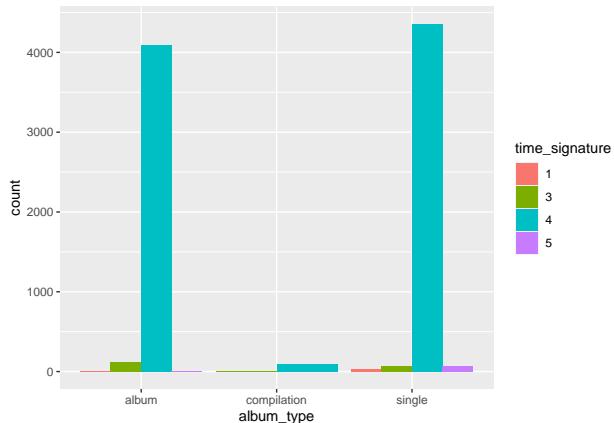


```
[1] "Chi-square test for album_type and major_mode"
```

Pearson's Chi-squared test

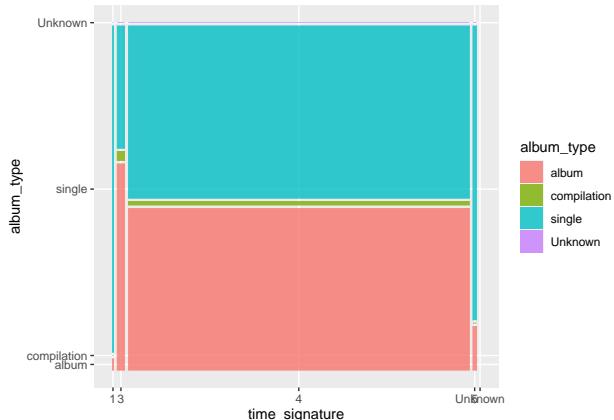
```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 3, p-value = NA
```

```
[1] "album_type and time_signature"
```



	1	3	4	5	Unknown
album	1	113	4092	11	0
compilation	0	5	89	0	0
single	29	67	4354	74	0
Unknown	0	0	0	0	0

```
Warning in chisq.test(table(cat_var1, cat_var2), correct = FALSE): Chi-squared approximation may be incorrect
```

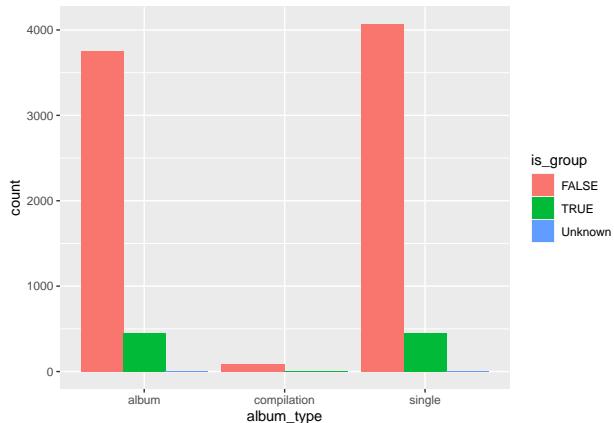


```
[1] "Chi-square test for album_type and time_signature"
```

Pearson's Chi-squared test

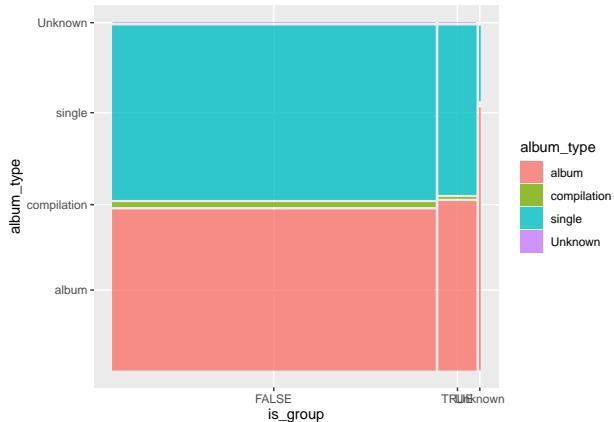
```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 12, p-value = NA
```

```
[1] "album_type and is_group"
```



	FALSE	TRUE	Unknown
album	3755	455	7
compilation	93	1	0
single	4068	454	2
Unknown	0	0	0

```
Warning in chisq.test(table(cat_var1, cat_var2), correct = FALSE): Chi-squared approximation may be incorrect
```

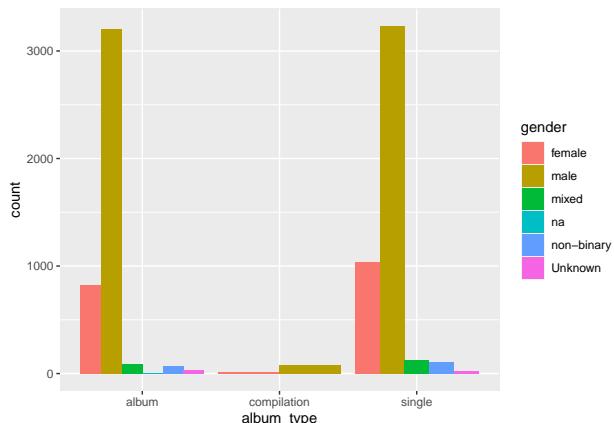


```
[1] "Chi-square test for album_type and is_group"
```

Pearson's Chi-squared test

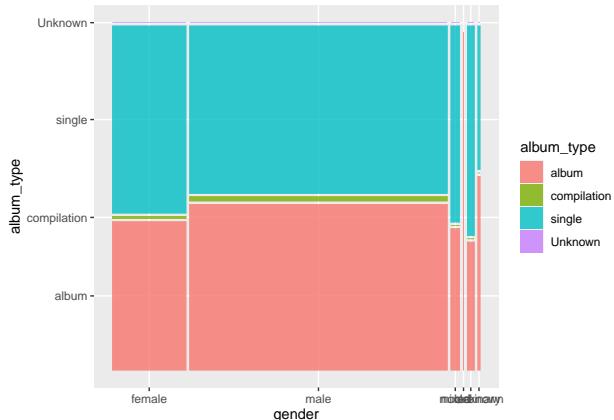
```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 6, p-value = NA
```

```
[1] "album_type and gender"
```



	female	male	mixed	na	non-binary	Unknown
album	819	3200	93	8	66	31
compilation	11	83	0	0	0	0
single	1033	3231	129	0	108	23
Unknown	0	0	0	0	0	0

```
Warning in chisq.test(table(cat_var1, cat_var2), correct = FALSE): Chi-squared approximation may be incorrect
```

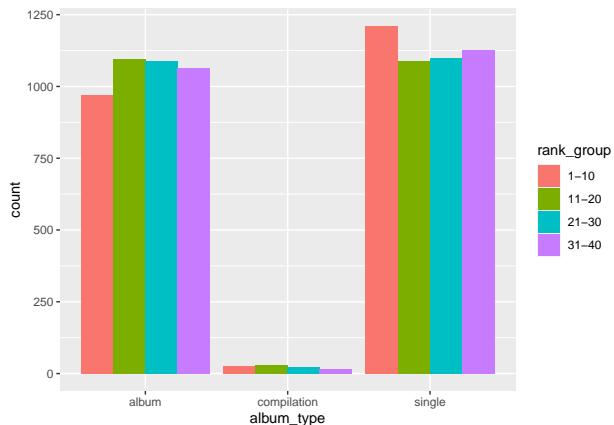


```
[1] "Chi-square test for album_type and gender"
```

Pearson's Chi-squared test

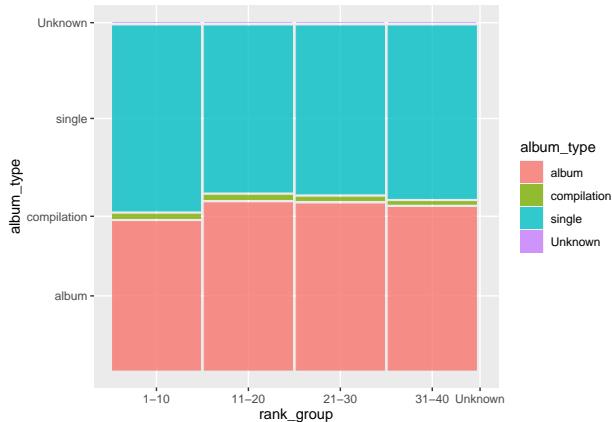
```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 15, p-value = NA
```

```
[1] "album_type and rank_group"
```



	1-10	11-20	21-30	31-40	Unknown
album	971	1095	1087	1064	0
compilation	27	28	23	16	0
single	1210	1087	1099	1128	0
Unknown	0	0	0	0	0

```
Warning in chisq.test(table(cat_var1, cat_var2), correct = FALSE): Chi-squared approximation may be incorrect
```

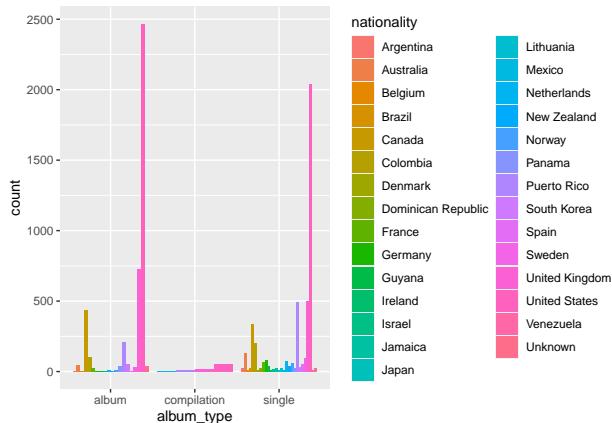


[1] "Chi-square test for album\_type and rank\_group"

Pearson's Chi-squared test

```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 12, p-value = NA
```

[1] "album\_type and nationality"



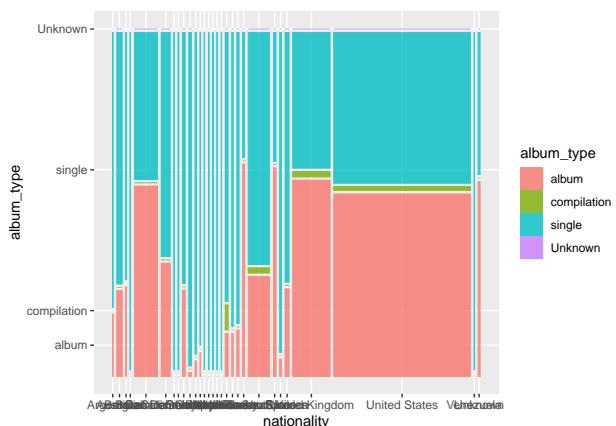
	Argentina	Australia	Belgium	Brazil	Canada	Colombia	Denmark
album	5	45	4	0	437	101	0
compilation	0	0	0	0	0	0	0
single	22	132	11	23	338	200	13
Unknown	0	0	0	0	0	0	0

	Dominican Republic	France	Germany	Guyana	Ireland	Israel	Jamaica
album	0	23	1	2	1	0	0
compilation	0	0	0	0	0	0	0
single	26	67	85	41	13	19	26
Unknown	0	0	0	0	0	0	0

	Japan	Lithuania	Mexico	Netherlands	New Zealand	Norway	Panama
album	0	0	0	12	6	10	39
compilation	0	0	0	7	0	0	0
single	9	25	13	75	41	63	23

Unknown	0	0	0	0	0	0	0
Puerto Rico South Korea Spain Sweden United Kingdom United States							
album	212	55	3	34	725	2465	
compilation	11	0	0	0	20	56	
single	492	34	55	97	502	2039	
Unknown	0	0	0	0	0	0	
Venezuela Unknown							
album	0	37					
compilation	0	0					
single	13	27					
Unknown	0	0					

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

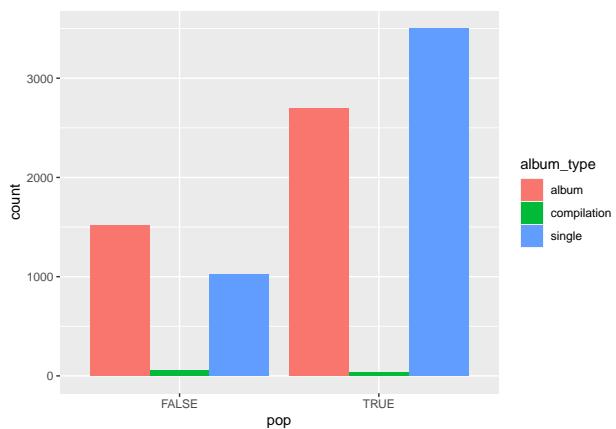


[1] "Chi-square test for album\_type and nationality"

Pearson's Chi-squared test

```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 84, p-value = NA
```

[1] "pop and album\_type"

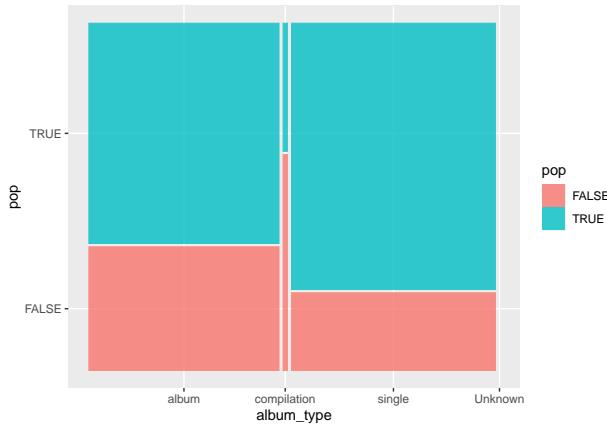


```

      album compilation single Unknown
FALSE    1517           59   1023     0
TRUE     2700           35   3501     0

```

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect



[1] "Chi-square test for pop and album\_type"

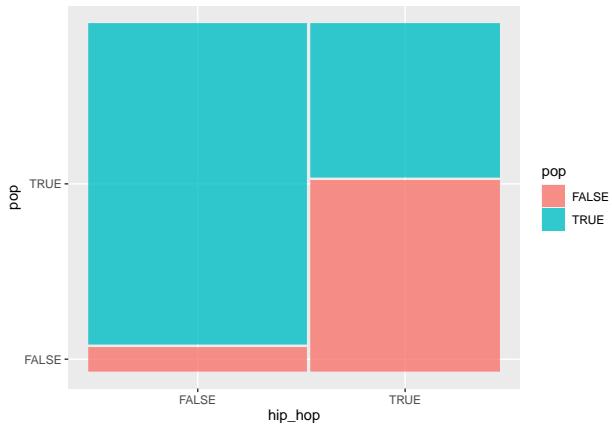
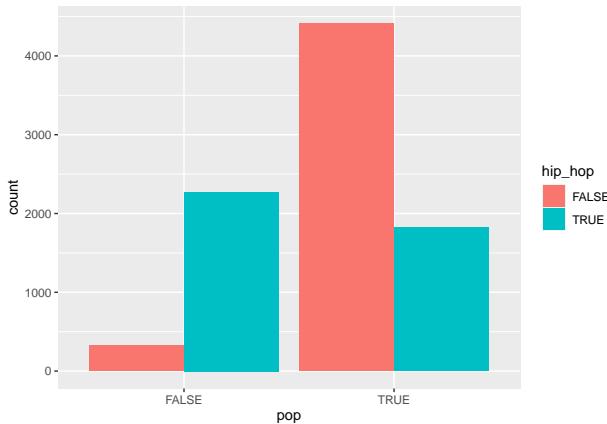
Pearson's Chi-squared test

```

data: table(cat_var1, cat_var2)
X-squared = NaN, df = 3, p-value = NA

```

[1] "pop and hip\_hop"



```

      FALSE  TRUE
FALSE    327 2272
TRUE     4409 1827

```

[1] "Chi-square test for pop and hip\_hop"

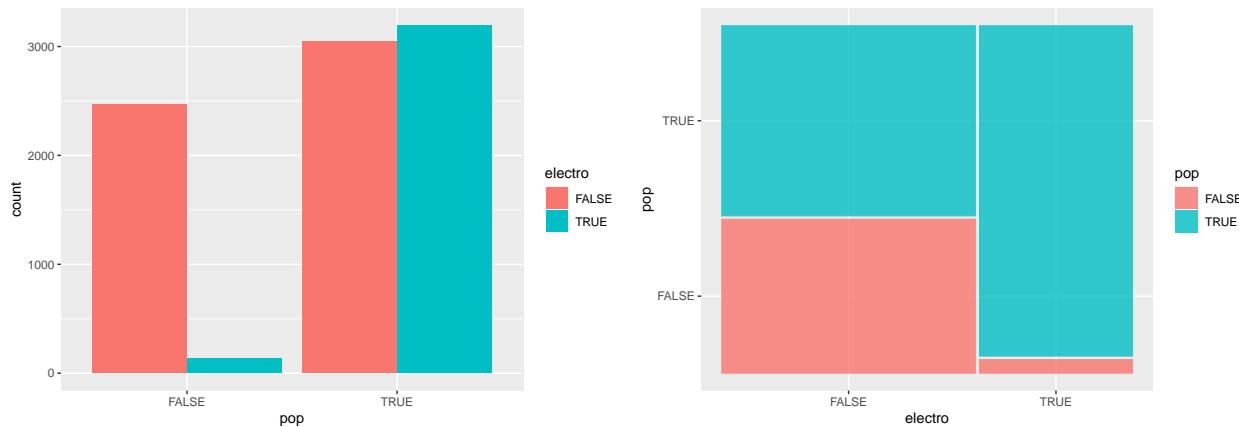
Pearson's Chi-squared test

```

data: table(cat_var1, cat_var2)
X-squared = 2491.7, df = 1, p-value < 2.2e-16

```

```
[1] "pop and electro"
```

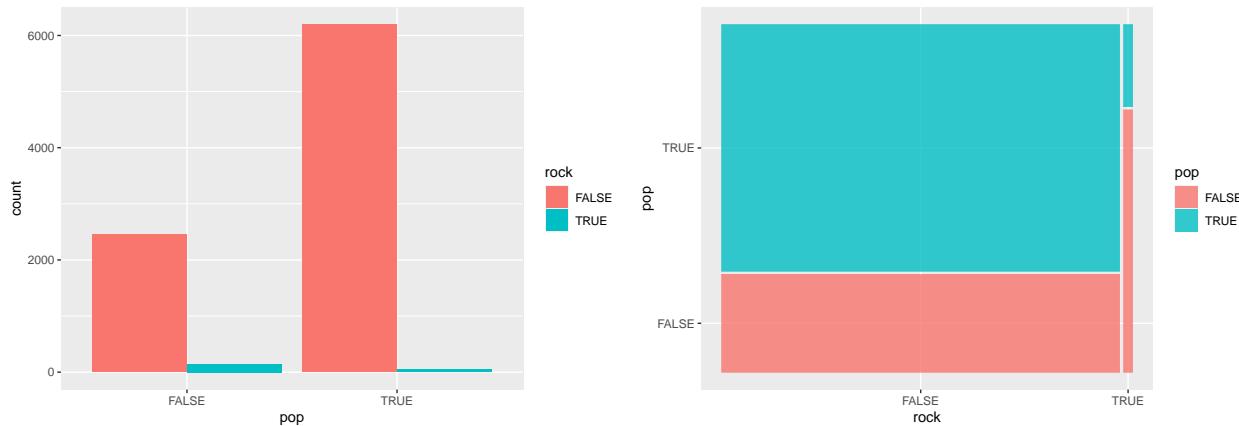


```
      FALSE  TRUE  
FALSE  2466  133  
TRUE   3045  3191  
[1] "Chi-square test for pop and electro"
```

Pearson's Chi-squared test

```
data: table(cat_var1, cat_var2)  
X-squared = 1657.9, df = 1, p-value < 2.2e-16
```

```
[1] "pop and rock"
```

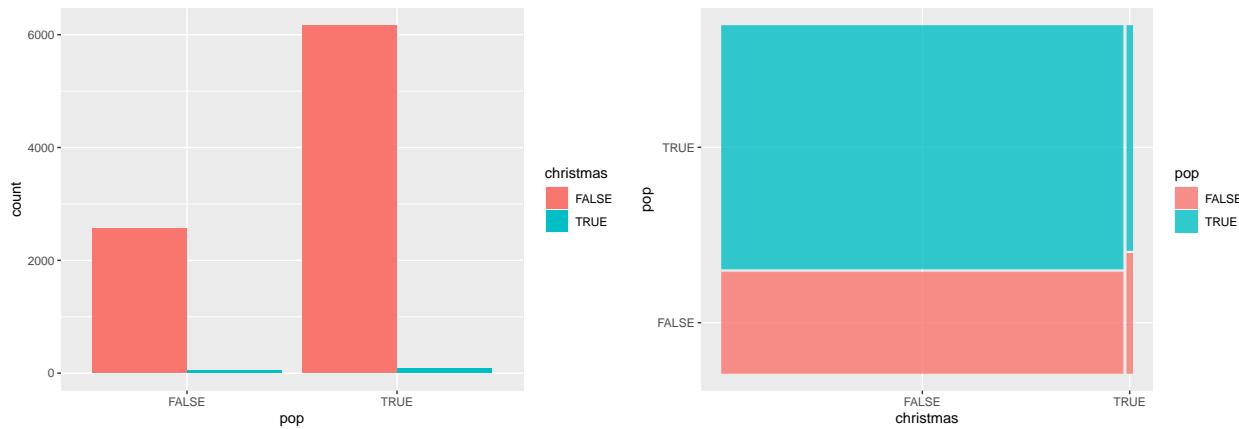


```
      FALSE  TRUE  
FALSE  2455  144  
TRUE   6191  45  
[1] "Chi-square test for pop and rock"
```

Pearson's Chi-squared test

```
data: table(cat_var1, cat_var2)  
X-squared = 203.49, df = 1, p-value < 2.2e-16
```

```
[1] "pop and christmas"
```



  FALSE TRUE

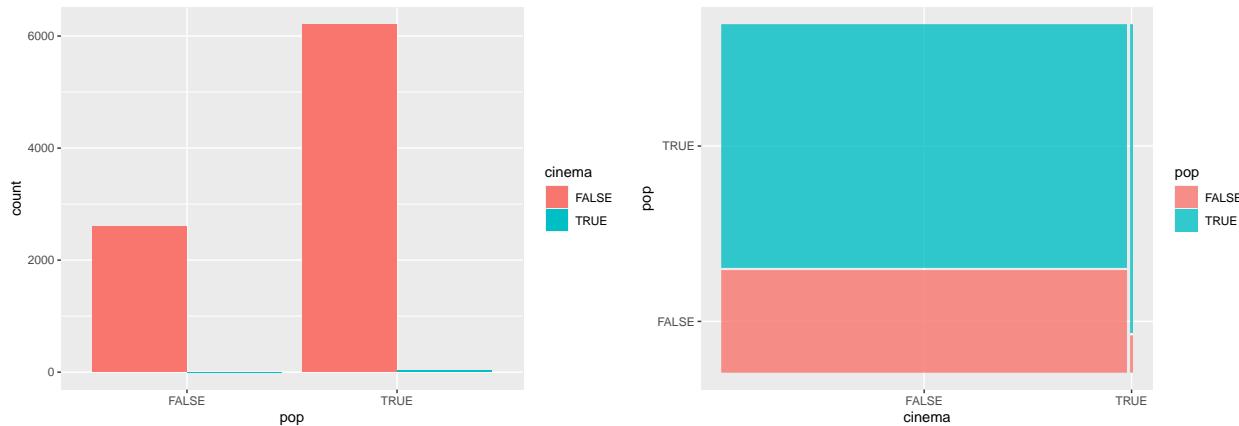
FALSE	2558	41
TRUE	6159	77

```
[1] "Chi-square test for pop and christmas"
```

Pearson's Chi-squared test

```
data: table(cat_var1, cat_var2)
X-squared = 1.6355, df = 1, p-value = 0.2009
```

```
[1] "pop and cinema"
```



  FALSE TRUE

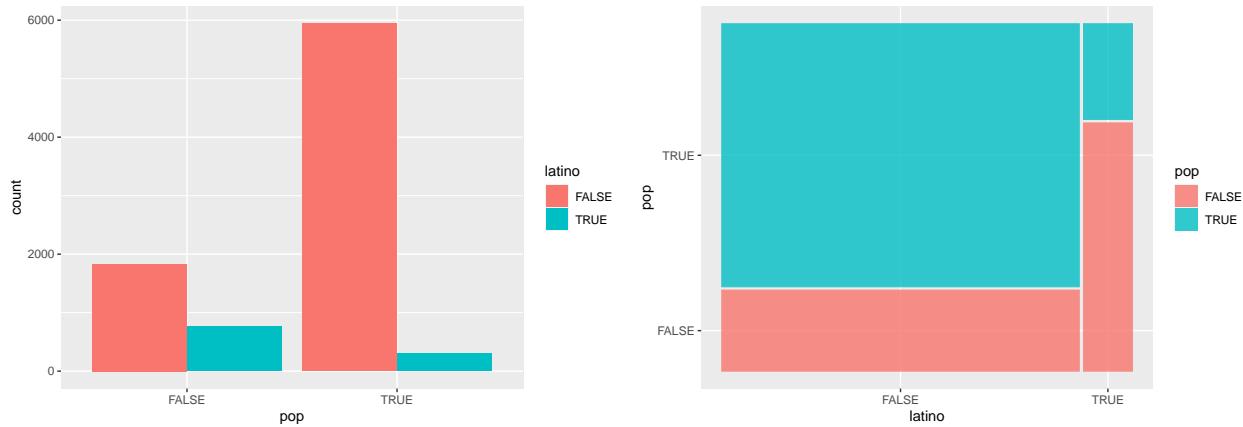
FALSE	2595	4
TRUE	6202	34

```
[1] "Chi-square test for pop and cinema"
```

Pearson's Chi-squared test

```
data: table(cat_var1, cat_var2)
X-squared = 6.5593, df = 1, p-value = 0.01043
```

```
[1] "pop and latino"
```



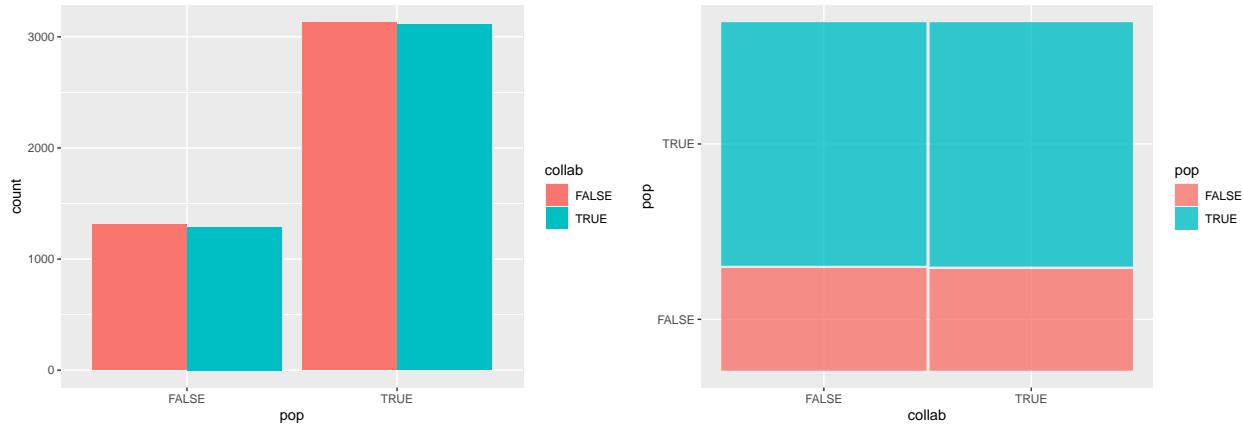
	FALSE	TRUE
FALSE	1830	769
TRUE	5939	297

```
[1] "Chi-square test for pop and latino"
```

Pearson's Chi-squared test

```
data: table(cat_var1, cat_var2)
X-squared = 1065.6, df = 1, p-value < 2.2e-16
```

```
[1] "pop and collab"
```



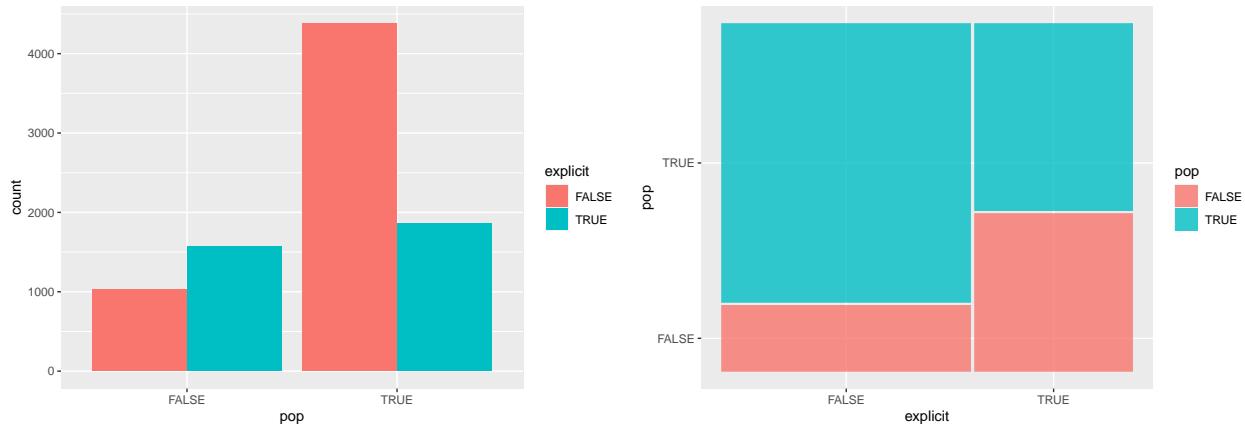
	FALSE	TRUE
FALSE	1311	1288
TRUE	3127	3109

```
[1] "Chi-square test for pop and collab"
```

Pearson's Chi-squared test

```
data: table(cat_var1, cat_var2)
X-squared = 0.065232, df = 1, p-value = 0.7984
```

```
[1] "pop and explicit"
```



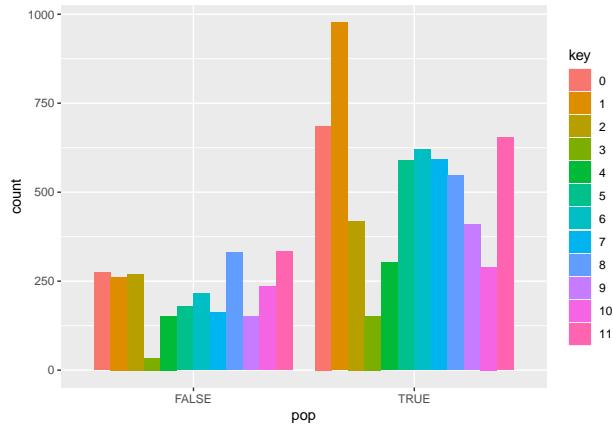
	FALSE	TRUE
FALSE	1032	1567
TRUE	4377	1859

```
[1] "Chi-square test for pop and explicit"
```

Pearson's Chi-squared test

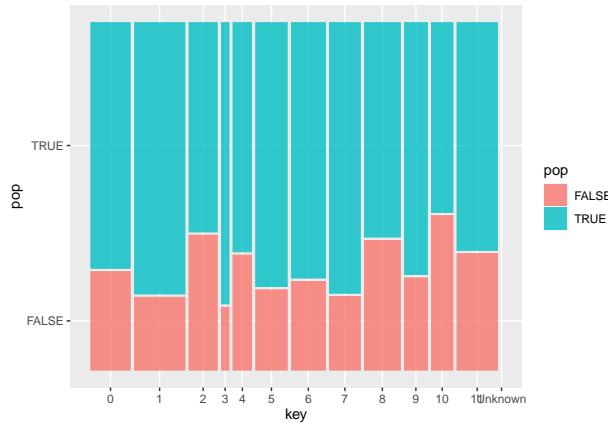
```
data: table(cat_var1, cat_var2)
X-squared = 717.95, df = 1, p-value < 2.2e-16
```

```
[1] "pop and key"
```



	0	1	2	3	4	5	6	7	8	9	10	11	Unknown
FALSE	275	262	270	34	152	179	215	161	331	150	236	334	0
TRUE	686	976	419	152	303	589	619	592	547	410	290	653	0

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

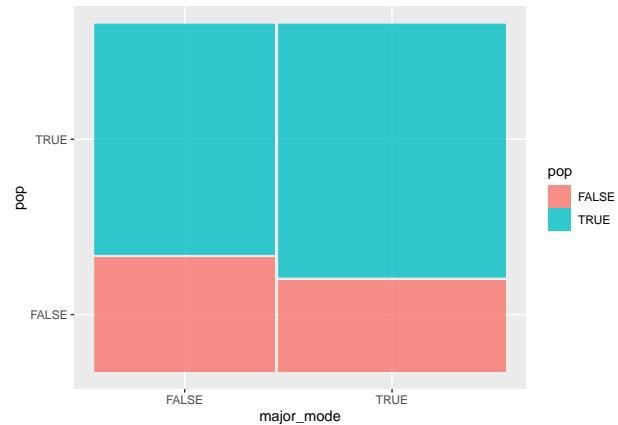
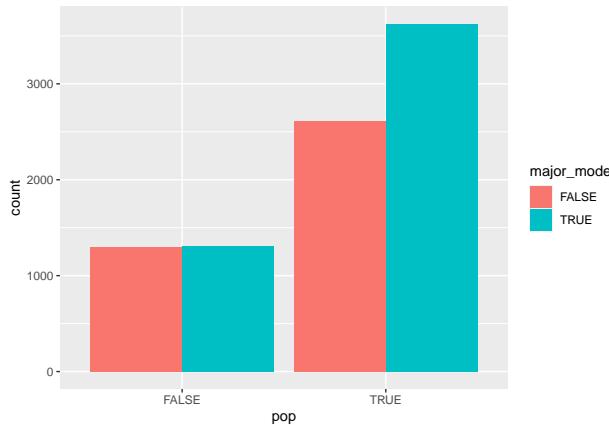


[1] "Chi-square test for pop and key"

Pearson's Chi-squared test

```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 12, p-value = NA
```

[1] "pop and major\_mode"

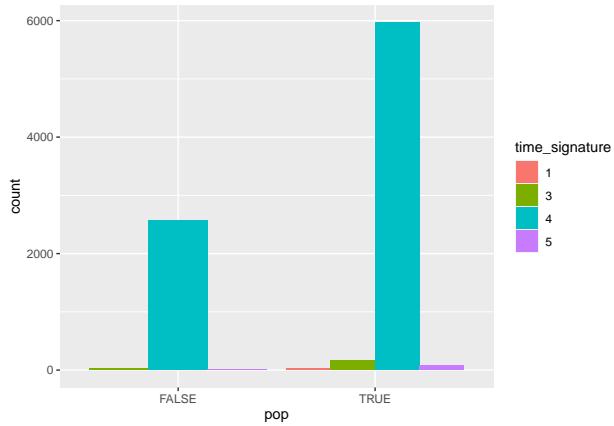


```
      FALSE  TRUE
FALSE  1294 1305
TRUE   2614 3622
[1] "Chi-square test for pop and major_mode"
```

Pearson's Chi-squared test

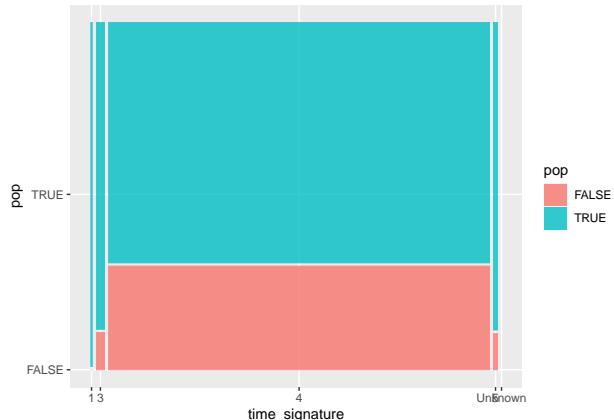
```
data: table(cat_var1, cat_var2)
X-squared = 46.066, df = 1, p-value = 1.143e-11
```

[1] "pop and time\_signature"



	1	3	4	5	Unknown
FALSE	0	20	2570	9	0
TRUE	30	165	5965	76	0

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

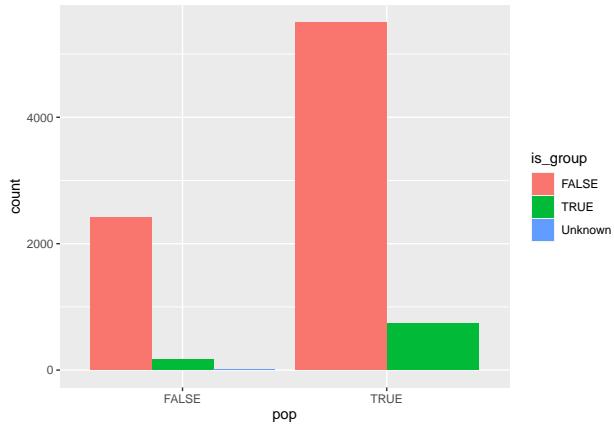


[1] "Chi-square test for pop and time\_signature"

Pearson's Chi-squared test

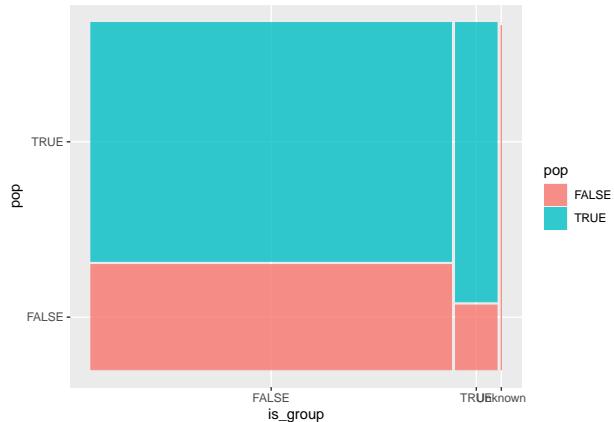
```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 4, p-value = NA
```

[1] "pop and is\_group"



```
      FALSE  TRUE Unknown
FALSE  2419   171     9
TRUE   5497   739     0
```

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

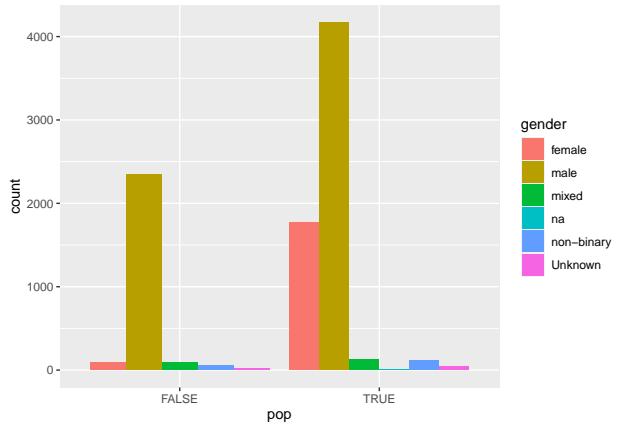


[1] "Chi-square test for pop and is\_group"

Pearson's Chi-squared test

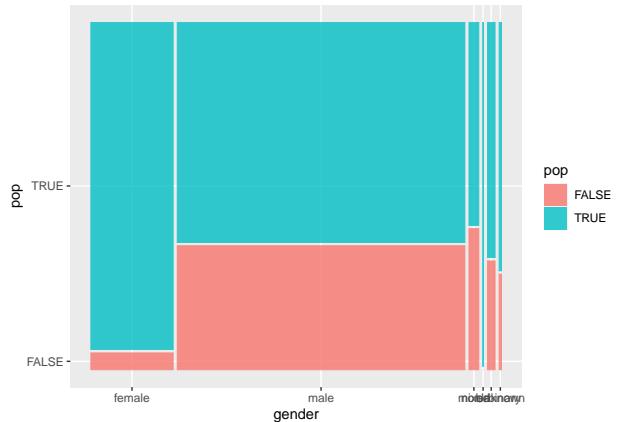
```
data: table(cat_var1, cat_var2)
X-squared = 76.045, df = 2, p-value < 2.2e-16
```

[1] "pop and gender"



	female	male	mixed	na	non-binary	Unknown
FALSE	91	2347	91	0	55	15
TRUE	1772	4167	131	8	119	39

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

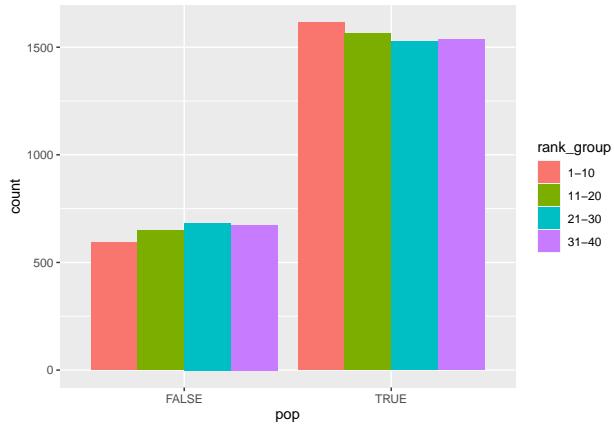


[1] "Chi-square test for pop and gender"

Pearson's Chi-squared test

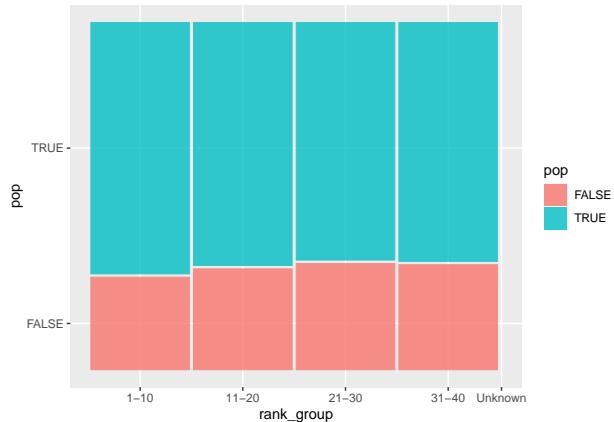
```
data: table(cat_var1, cat_var2)
X-squared = 695.33, df = 5, p-value < 2.2e-16
```

[1] "pop and rank\_group"



	1-10	11-20	21-30	31-40	Unknown
FALSE	594	648	683	674	0
TRUE	1614	1562	1526	1534	0

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

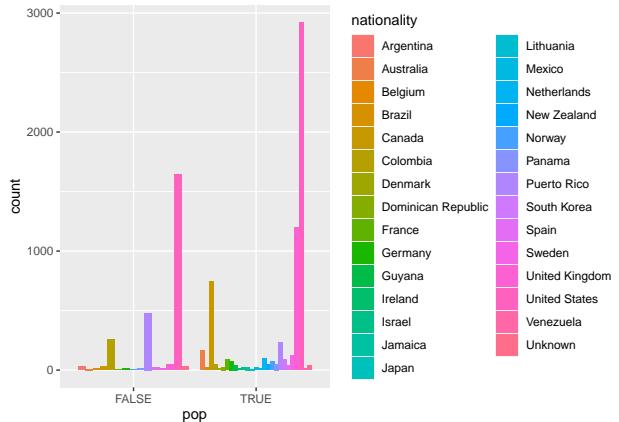


[1] "Chi-square test for pop and rank\_group"

Pearson's Chi-squared test

```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 4, p-value = NA
```

[1] "pop and nationality"



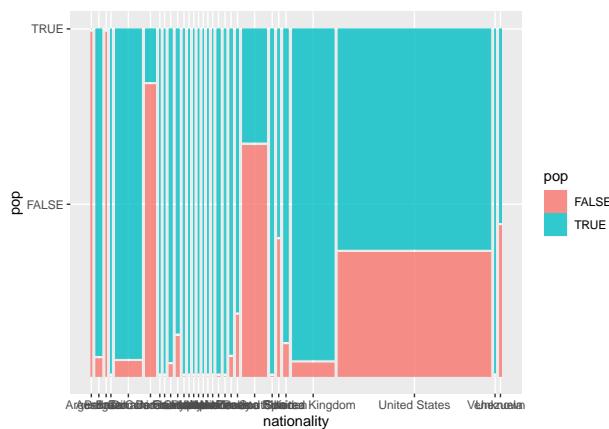
	Argentina	Australia	Belgium	Brazil	Canada	Colombia	Denmark
FALSE	27	9	15	0	33	255	0
TRUE	0	168	0	23	742	46	13

	Dominican Republic	France	Germany	Guyana	Ireland	Israel	Jamaica	Japan
FALSE	0	3	10	0	0	0	0	0
TRUE	26	87	76	43	14	19	26	9

	Lithuania	Mexico	Netherlands	New Zealand	Norway	Panama	Puerto Rico
FALSE	0	0	0	0	4	11	480
TRUE	25	13	94	47	69	51	235

	South Korea	Spain	Sweden	United Kingdom	United States	Venezuela	Unknown
FALSE	0	23	12	48	1641	0	28
TRUE	89	35	119	1199	2919	13	36

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

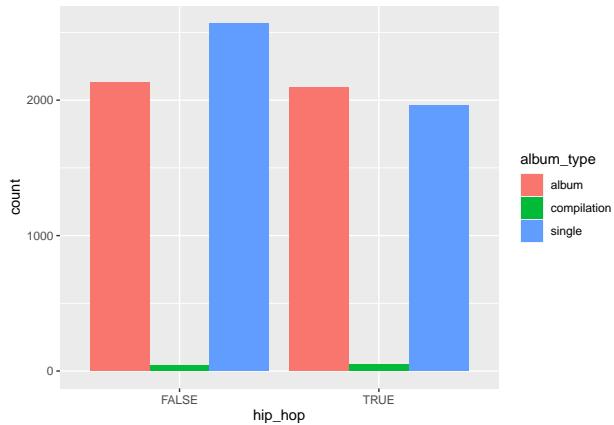


[1] "Chi-square test for pop and nationality"

Pearson's Chi-squared test

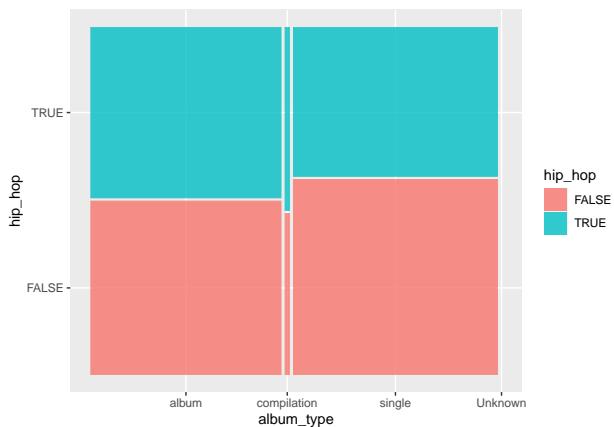
```
data: table(cat_var1, cat_var2)
X-squared = 2099.2, df = 28, p-value < 2.2e-16
```

```
[1] "hip_hop and album_type"
```



	album	compilation	single	Unknown
FALSE	2127	44	2565	0
TRUE	2090	50	1959	0

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

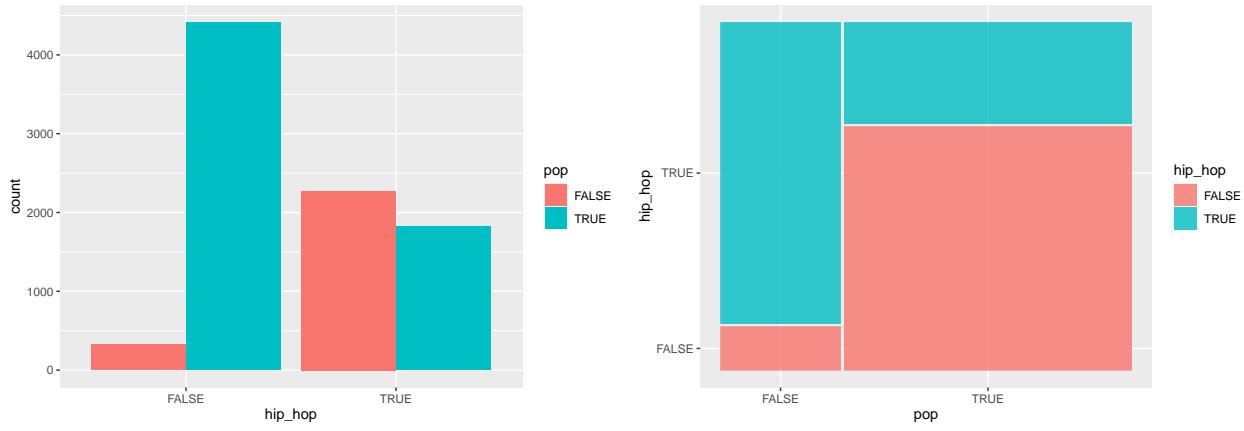


```
[1] "Chi-square test for hip_hop and album_type"
```

Pearson's Chi-squared test

```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 3, p-value = NA
```

```
[1] "hip_hop and pop"
```



```

      FALSE  TRUE
FALSE    327 4409
TRUE    2272 1827
[1] "Chi-square test for hip_hop and pop"

```

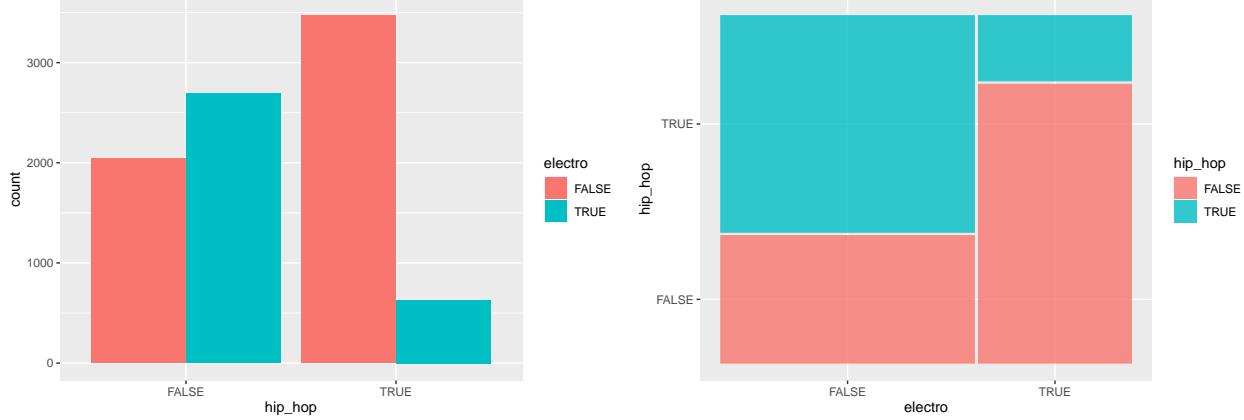
Pearson's Chi-squared test

```

data: table(cat_var1, cat_var2)
X-squared = 2491.7, df = 1, p-value < 2.2e-16

```

```
[1] "hip_hop and electro"
```



```

      FALSE  TRUE
FALSE    2042 2694
TRUE    3469  630
[1] "Chi-square test for hip_hop and electro"

```

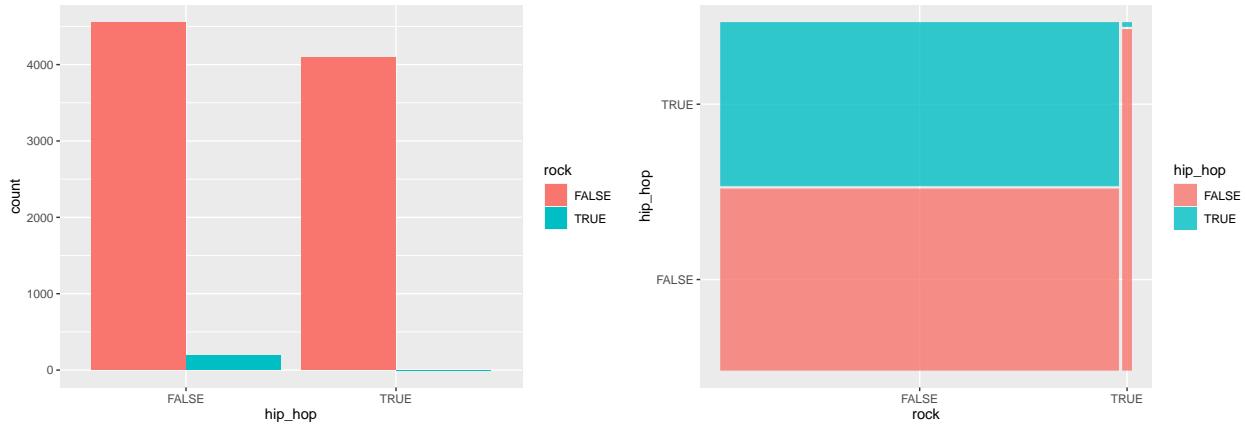
Pearson's Chi-squared test

```

data: table(cat_var1, cat_var2)
X-squared = 1613.6, df = 1, p-value < 2.2e-16

```

```
[1] "hip_hop and rock"
```



```

      FALSE  TRUE
FALSE  4549   187
TRUE   4097    2
[1] "Chi-square test for hip_hop and rock"

```

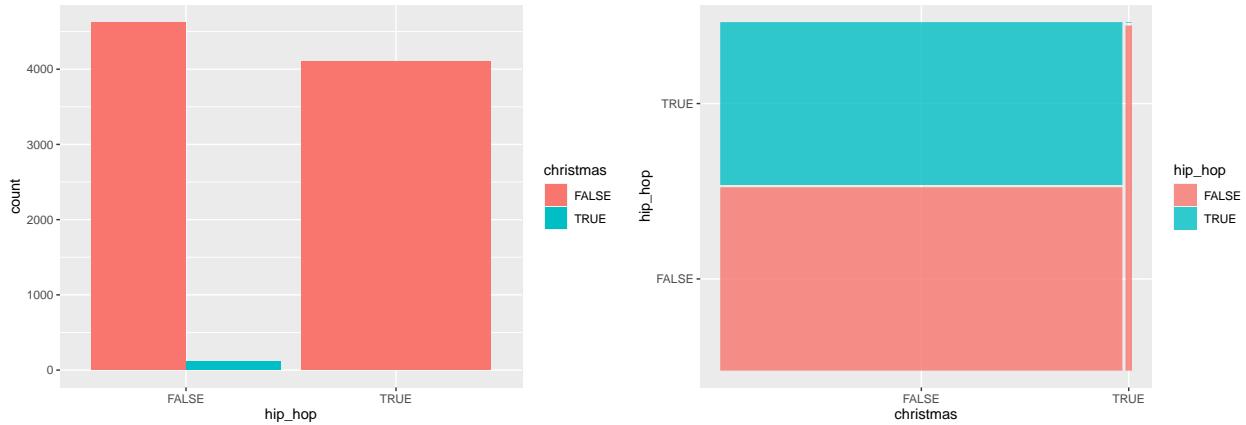
Pearson's Chi-squared test

```

data: table(cat_var1, cat_var2)
X-squared = 159.62, df = 1, p-value < 2.2e-16

```

[1] "hip\_hop and christmas"



```

      FALSE  TRUE
FALSE  4618   118
TRUE   4099    0
[1] "Chi-square test for hip_hop and christmas"

```

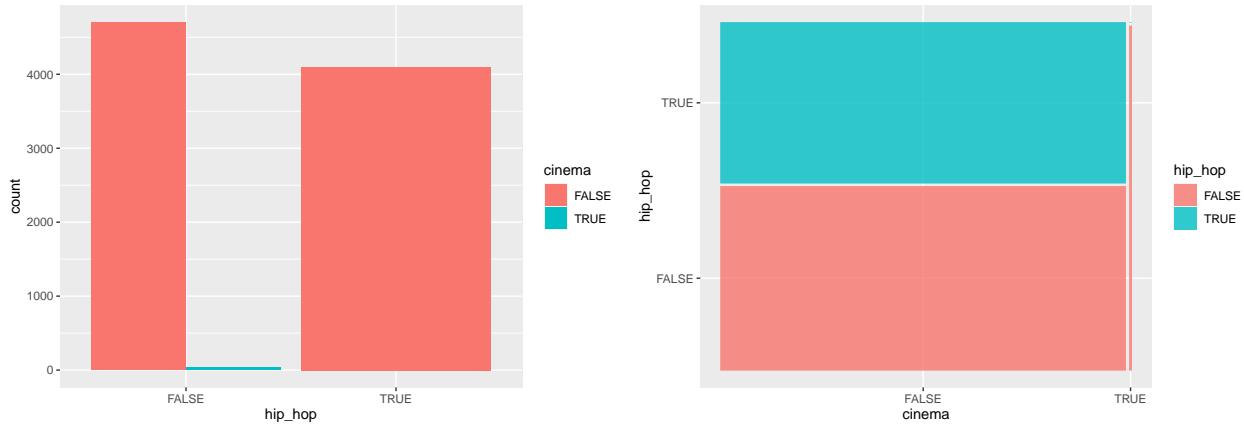
Pearson's Chi-squared test

```

data: table(cat_var1, cat_var2)
X-squared = 103.51, df = 1, p-value < 2.2e-16

```

[1] "hip\_hop and cinema"



```

      FALSE  TRUE
FALSE  4698   38
TRUE   4099   0
[1] "Chi-square test for hip_hop and cinema"

```

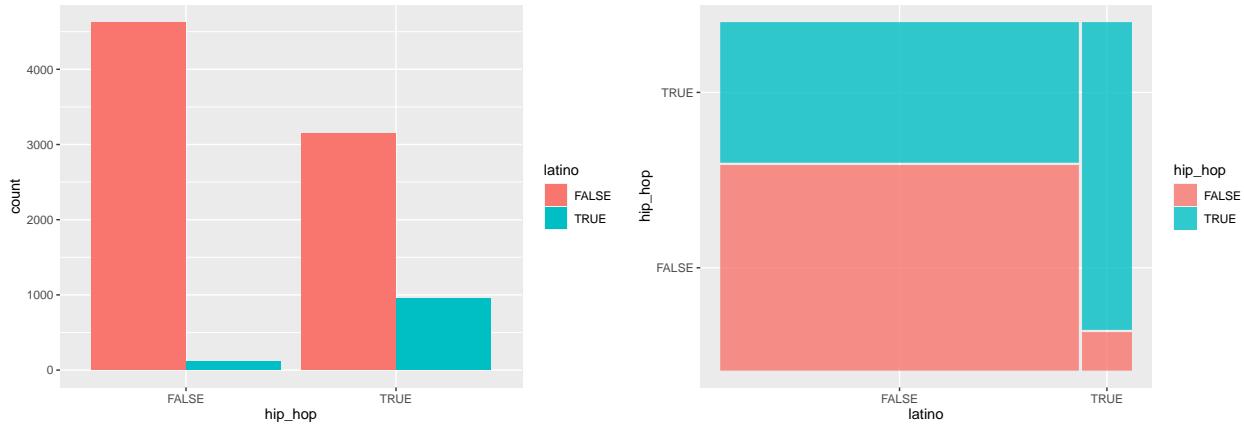
Pearson's Chi-squared test

```

data: table(cat_var1, cat_var2)
X-squared = 33.031, df = 1, p-value = 9.07e-09

```

[1] "hip\_hop and latino"



```

      FALSE  TRUE
FALSE  4620   116
TRUE   3149   950
[1] "Chi-square test for hip_hop and latino"

```

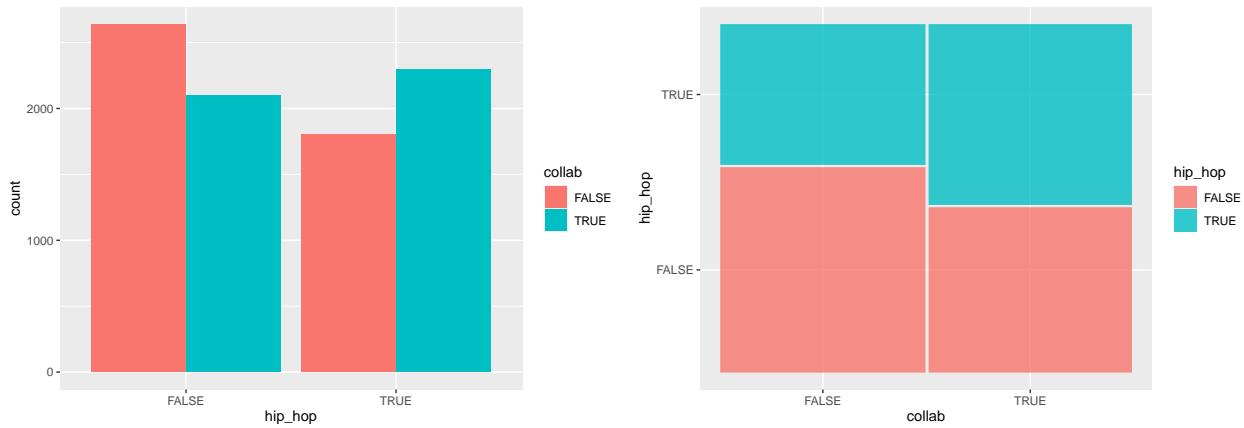
Pearson's Chi-squared test

```

data: table(cat_var1, cat_var2)
X-squared = 889.71, df = 1, p-value < 2.2e-16

```

[1] "hip\_hop and collab"



```

      FALSE  TRUE
FALSE   2636 2100
TRUE    1802 2297
[1] "Chi-square test for hip_hop and collab"

```

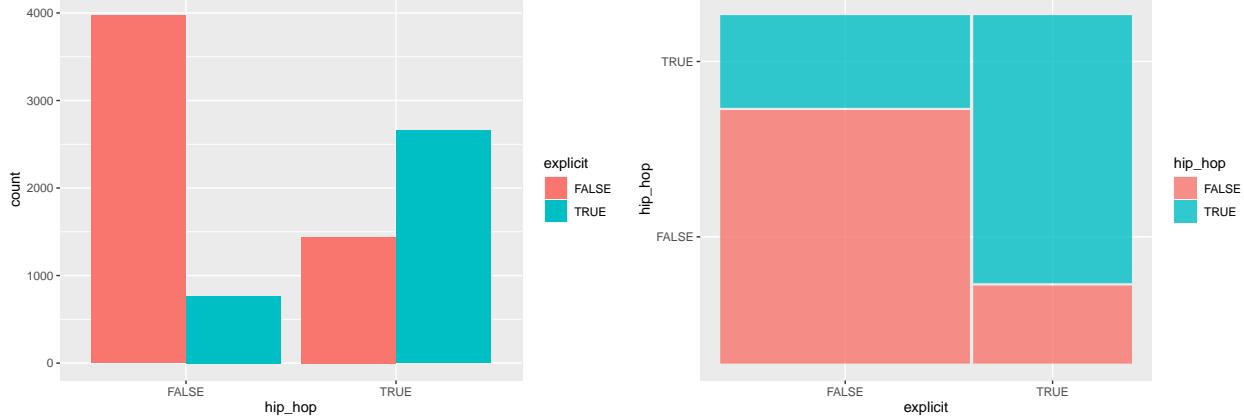
Pearson's Chi-squared test

```

data: table(cat_var1, cat_var2)
X-squared = 120.25, df = 1, p-value < 2.2e-16

```

```
[1] "hip_hop and explicit"
```



```

      FALSE  TRUE
FALSE   3969  767
TRUE    1440 2659
[1] "Chi-square test for hip_hop and explicit"

```

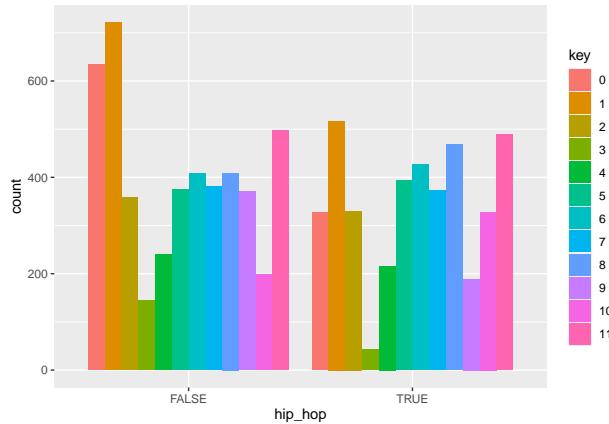
Pearson's Chi-squared test

```

data: table(cat_var1, cat_var2)
X-squared = 2192.8, df = 1, p-value < 2.2e-16

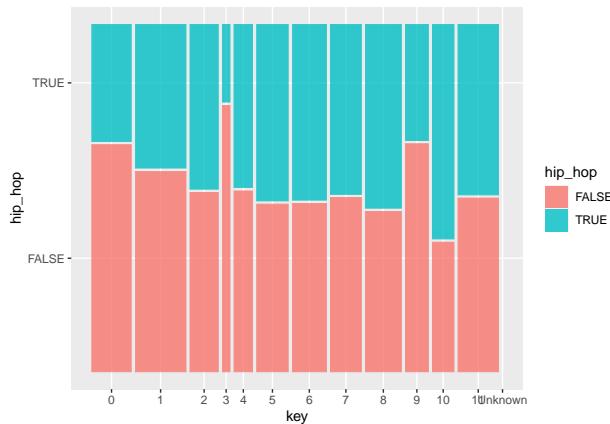
```

```
[1] "hip_hop and key"
```



	0	1	2	3	4	5	6	7	8	9	10	11	Unknown
FALSE	634	721	359	144	239	374	408	381	409	371	198	498	0
TRUE	327	517	330	42	216	394	426	372	469	189	328	489	0

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

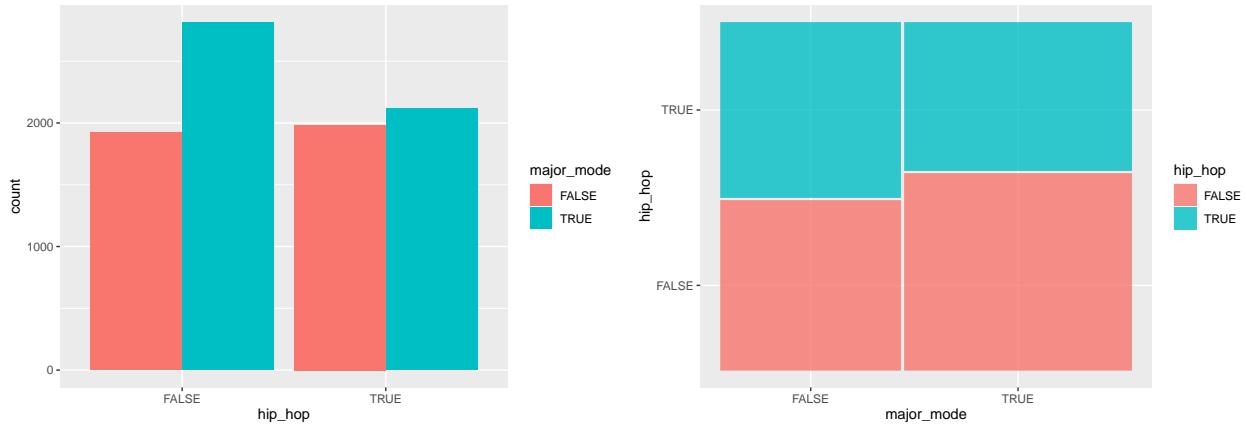


```
[1] "Chi-square test for hip_hop and key"
```

```
Pearson's Chi-squared test
```

```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 12, p-value = NA
```

```
[1] "hip_hop and major_mode"
```



```

      FALSE  TRUE
FALSE   1924 2812
TRUE    1984 2115
[1] "Chi-square test for hip_hop and major_mode"

```

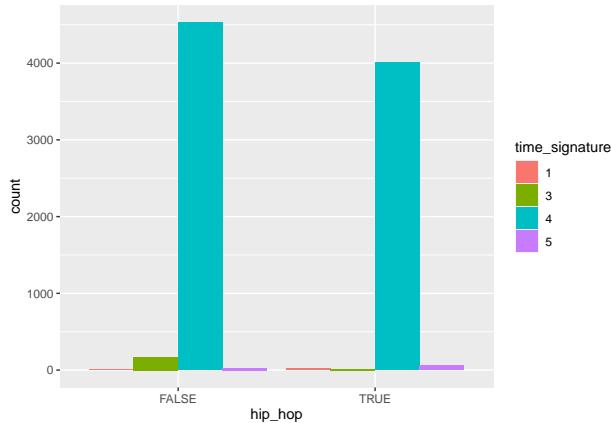
Pearson's Chi-squared test

```

data: table(cat_var1, cat_var2)
X-squared = 53.875, df = 1, p-value = 2.136e-13

```

[1] "hip\_hop and time\_signature"

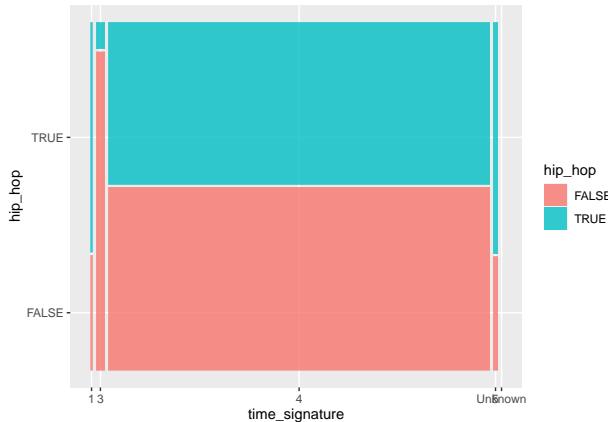


	1	3	4	5	Unknown
FALSE	10	171	4527	28	0
TRUE	20	14	4008	57	0

```

Warning in chisq.test(table(cat_var1, cat_var2), correct = FALSE): Chi-squared
approximation may be incorrect

```

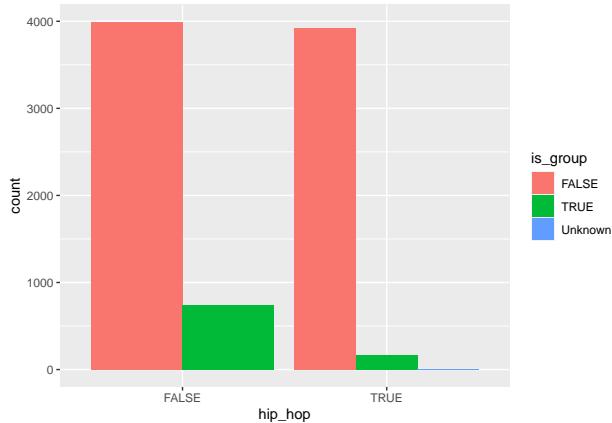


```
[1] "Chi-square test for hip_hop and time_signature"
```

Pearson's Chi-squared test

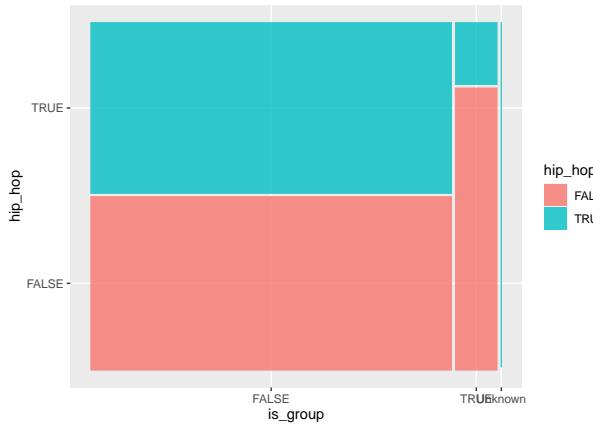
```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 4, p-value = NA
```

```
[1] "hip_hop and is_group"
```



	FALSE	TRUE	Unknown
FALSE	3990	746	0
TRUE	3926	164	9

```
Warning in chisq.test(table(cat_var1, cat_var2), correct = FALSE): Chi-squared approximation may be incorrect
```

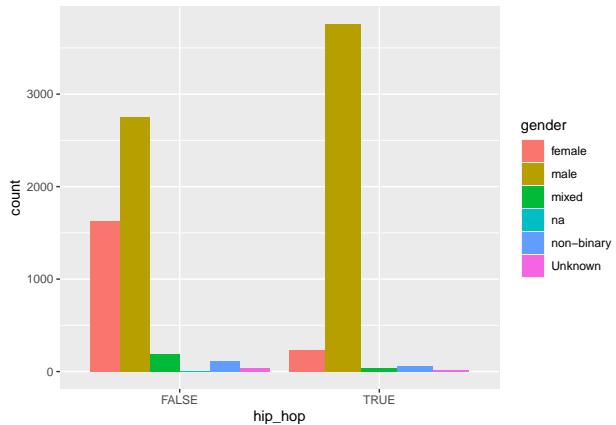


```
[1] "Chi-square test for hip_hop and is_group"
```

Pearson's Chi-squared test

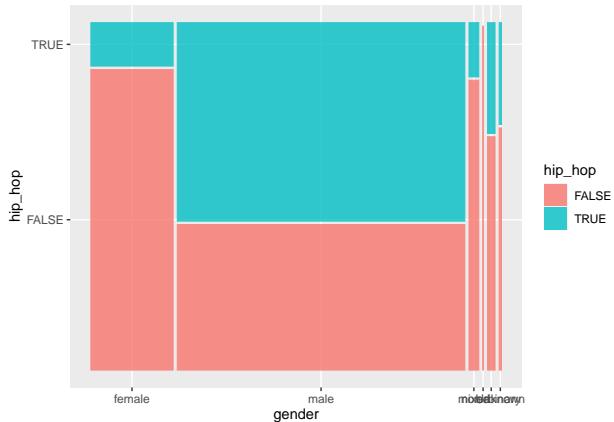
```
data: table(cat_var1, cat_var2)
X-squared = 337.57, df = 2, p-value < 2.2e-16
```

```
[1] "hip_hop and gender"
```



	female	male	mixed	na	non-binary	Unknown
FALSE	1628	2757	187	8	118	38
TRUE	235	3757	35	0	56	16

```
Warning in chisq.test(table(cat_var1, cat_var2), correct = FALSE): Chi-squared approximation may be incorrect
```

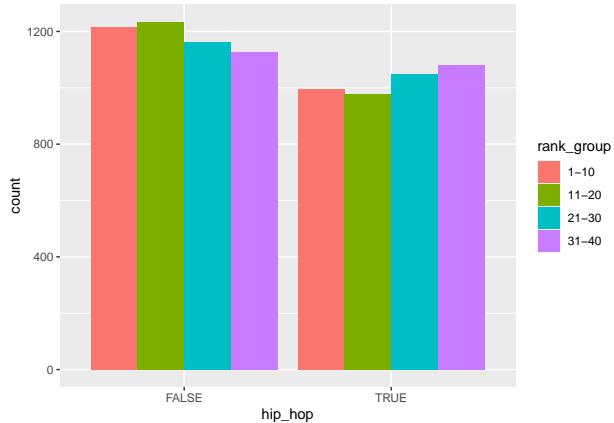


```
[1] "Chi-square test for hip_hop and gender"
```

Pearson's Chi-squared test

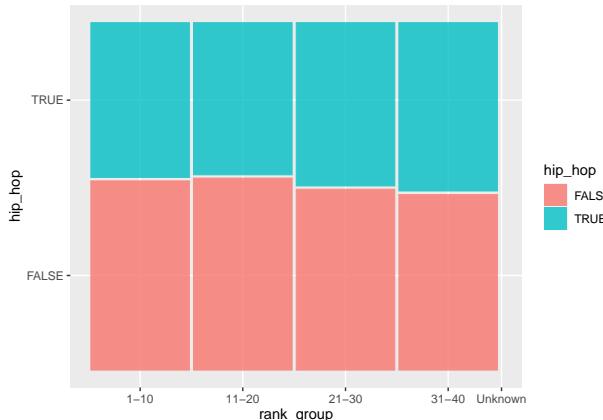
```
data: table(cat_var1, cat_var2)
X-squared = 1299, df = 5, p-value < 2.2e-16
```

```
[1] "hip_hop and rank_group"
```



	1-10	11-20	21-30	31-40	Unknown
FALSE	1214	1233	1161	1128	0
TRUE	994	977	1048	1080	0

```
Warning in chisq.test(table(cat_var1, cat_var2), correct = FALSE): Chi-squared approximation may be incorrect
```

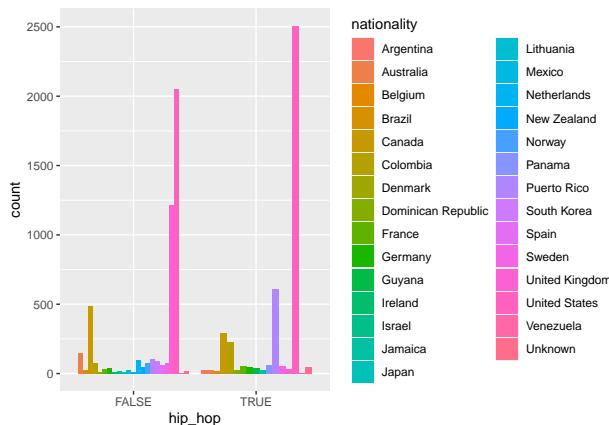


[1] "Chi-square test for hip\_hop and rank\_group"

Pearson's Chi-squared test

```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 4, p-value = NA
```

[1] "hip\_hop and nationality"



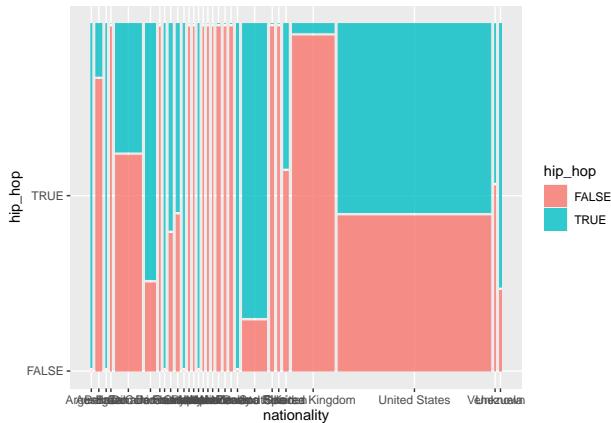
	Argentina	Australia	Belgium	Brazil	Canada	Colombia	Denmark
FALSE	0	150	0	23	486	77	13
TRUE	27	27	15	0	289	224	0

	Dominican Republic	France	Germany	Guyana	Ireland	Israel	Jamaica	Japan
FALSE	0	36	39	0	14	19	0	9
TRUE	26	54	47	43	0	0	26	0

	Lithuania	Mexico	Netherlands	New Zealand	Norway	Panama	Puerto Rico
FALSE	25	13	94	47	73	0	104
TRUE	0	0	0	0	0	62	611

	South Korea	Spain	Sweden	United Kingdom	United States	Venezuela	Unknown
FALSE	89	58	76	1214	2055	7	15
TRUE	0	0	55	33	2505	6	49

```
Warning in chisq.test(table(cat_var1, cat_var2), correct = FALSE): Chi-squared approximation may be incorrect
```

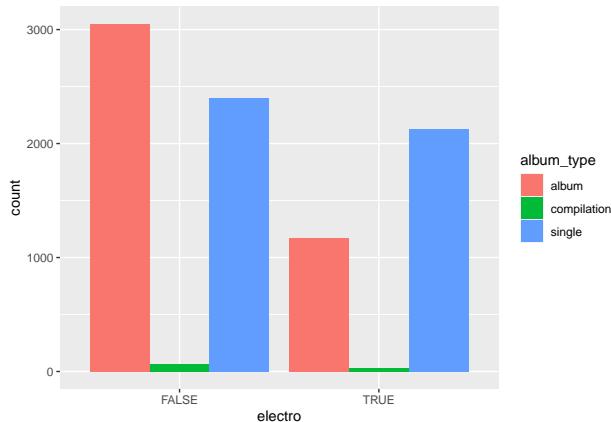


```
[1] "Chi-square test for hip_hop and nationality"
```

```
Pearson's Chi-squared test
```

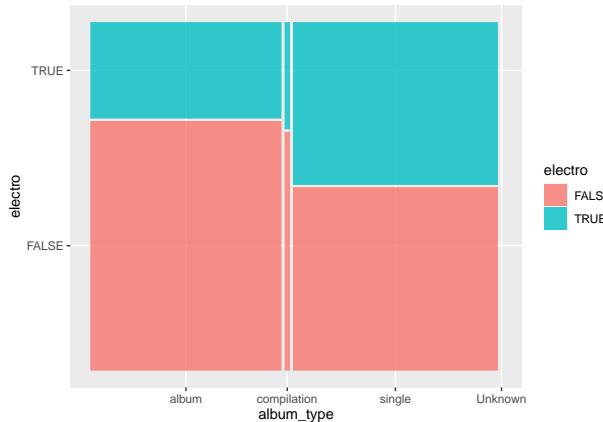
```
data: table(cat_var1, cat_var2)
X-squared = 2398.1, df = 28, p-value < 2.2e-16
```

```
[1] "electro and album_type"
```



	album	compilation	single	Unknown
FALSE	3048	65	2398	0
TRUE	1169	29	2126	0

```
Warning in chisq.test(table(cat_var1, cat_var2), correct = FALSE): Chi-squared approximation may be incorrect
```

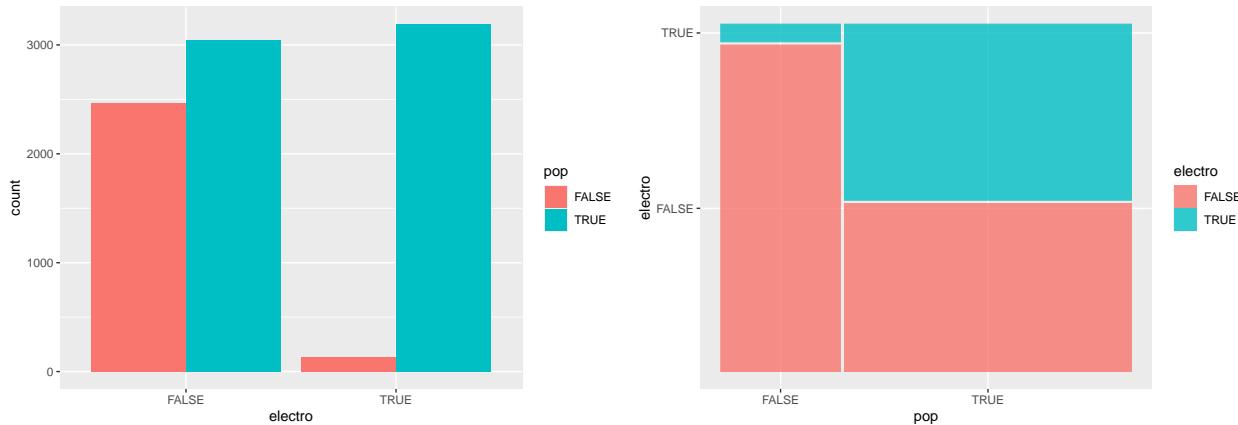


```
[1] "Chi-square test for electro and album_type"
```

Pearson's Chi-squared test

```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 3, p-value = NA
```

```
[1] "electro and pop"
```

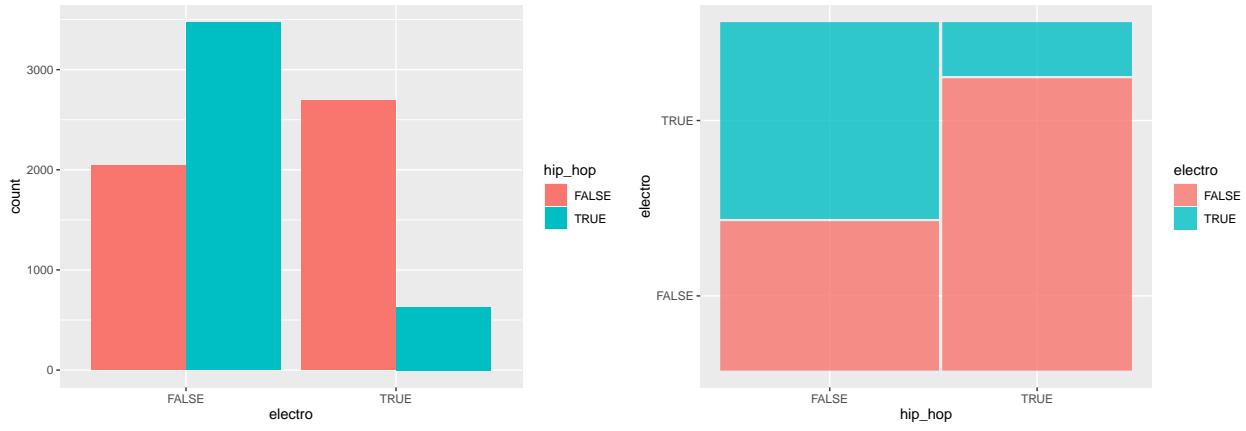


```
      FALSE  TRUE
FALSE   2466 3045
TRUE     133 3191
[1] "Chi-square test for electro and pop"
```

Pearson's Chi-squared test

```
data: table(cat_var1, cat_var2)
X-squared = 1657.9, df = 1, p-value < 2.2e-16
```

```
[1] "electro and hip_hop"
```



```

      FALSE  TRUE
FALSE  2042 3469
TRUE   2694  630
[1] "Chi-square test for electro and hip_hop"

```

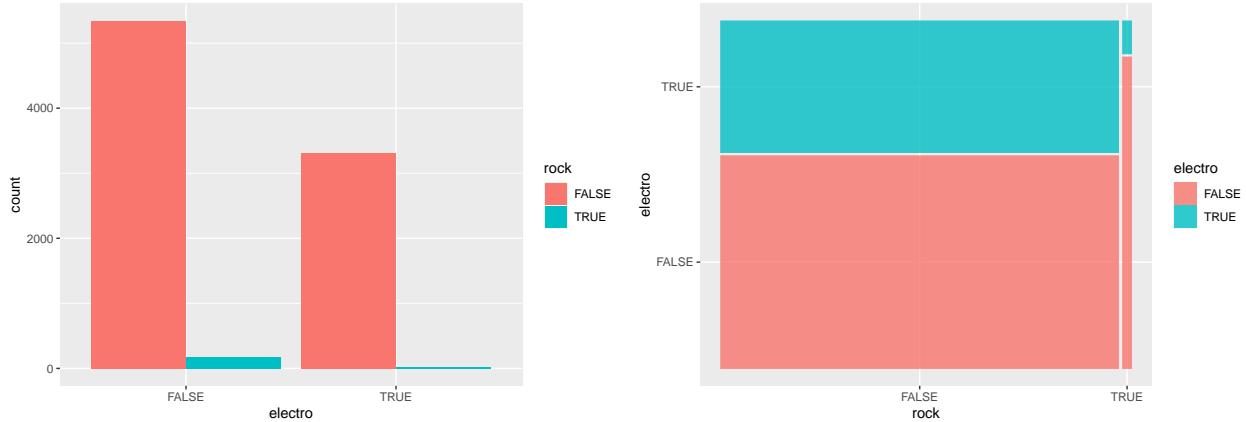
Pearson's Chi-squared test

```

data: table(cat_var1, cat_var2)
X-squared = 1613.6, df = 1, p-value < 2.2e-16

```

[1] "electro and rock"



```

      FALSE  TRUE
FALSE  5340  171
TRUE   3306  18
[1] "Chi-square test for electro and rock"

```

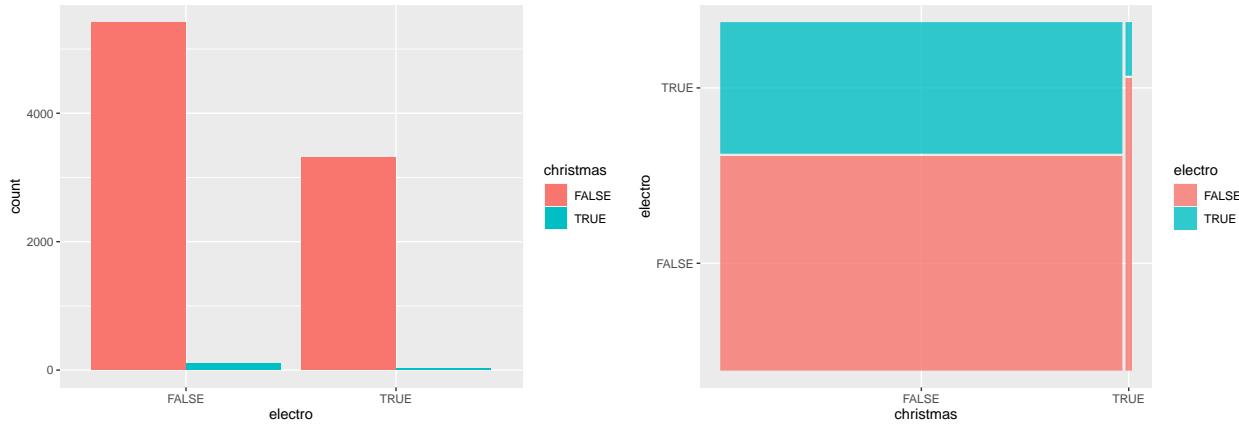
Pearson's Chi-squared test

```

data: table(cat_var1, cat_var2)
X-squared = 64.978, df = 1, p-value = 7.575e-16

```

[1] "electro and christmas"



```

      FALSE  TRUE
FALSE  5411   100
TRUE   3306    18
[1] "Chi-square test for electro and christmas"

```

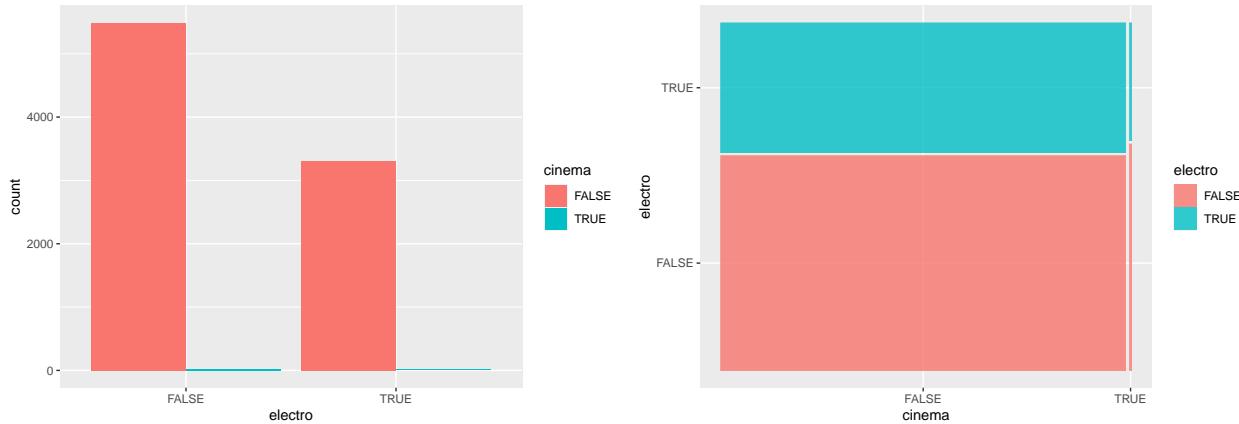
Pearson's Chi-squared test

```

data: table(cat_var1, cat_var2)
X-squared = 25.499, df = 1, p-value = 4.425e-07

```

[1] "electro and cinema"



```

      FALSE  TRUE
FALSE  5486   25
TRUE   3311   13
[1] "Chi-square test for electro and cinema"

```

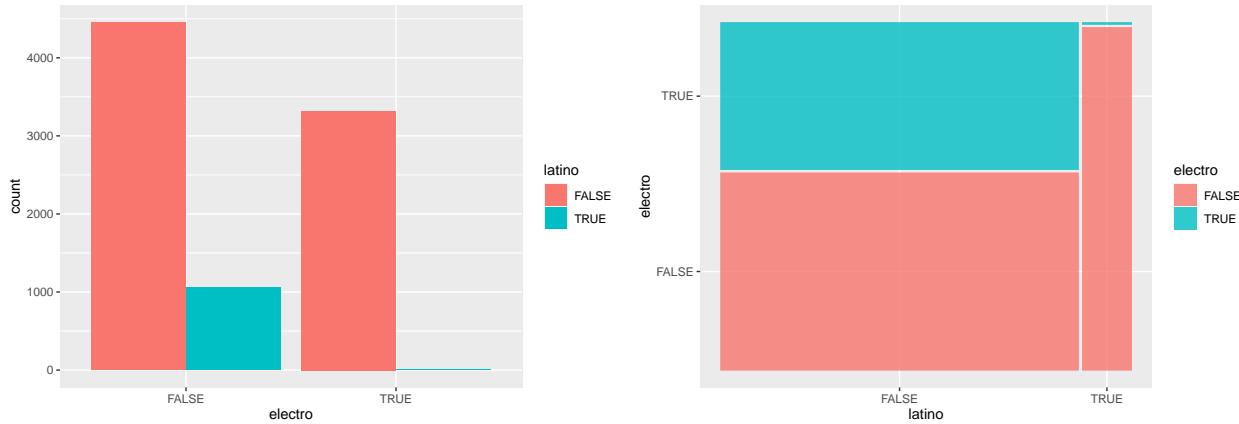
Pearson's Chi-squared test

```

data: table(cat_var1, cat_var2)
X-squared = 0.18938, df = 1, p-value = 0.6634

```

[1] "electro and latino"



```

      FALSE  TRUE
FALSE   4450 1061
TRUE    3319   5
[1] "Chi-square test for electro and latino"

```

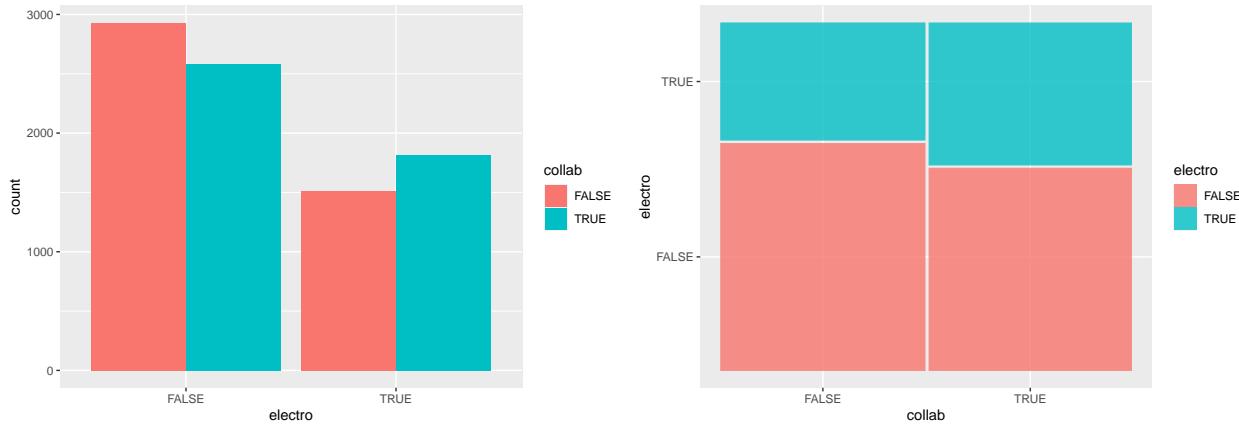
Pearson's Chi-squared test

```

data: table(cat_var1, cat_var2)
X-squared = 713.07, df = 1, p-value < 2.2e-16

```

[1] "electro and collab"



```

      FALSE  TRUE
FALSE   2928 2583
TRUE    1510 1814
[1] "Chi-square test for electro and collab"

```

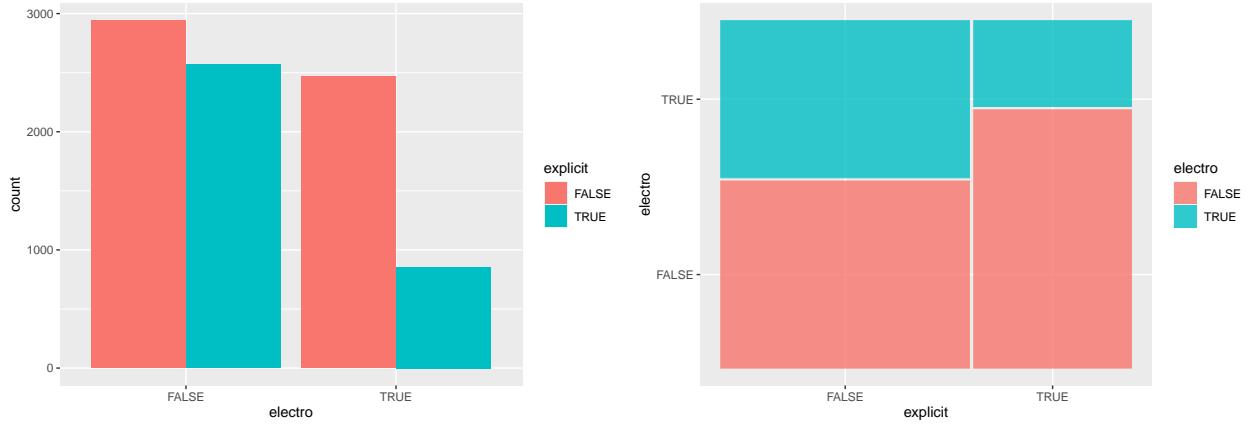
Pearson's Chi-squared test

```

data: table(cat_var1, cat_var2)
X-squared = 49.211, df = 1, p-value = 2.298e-12

```

[1] "electro and explicit"



```

      FALSE  TRUE
FALSE   2940 2571
TRUE    2469  855
[1] "Chi-square test for electro and explicit"

```

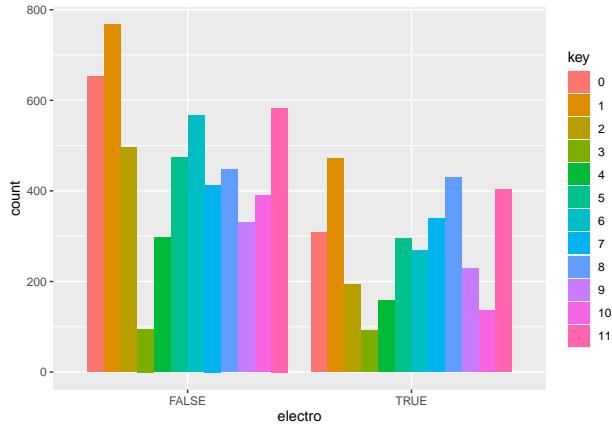
Pearson's Chi-squared test

```

data: table(cat_var1, cat_var2)
X-squared = 382.59, df = 1, p-value < 2.2e-16

```

[1] "electro and key"

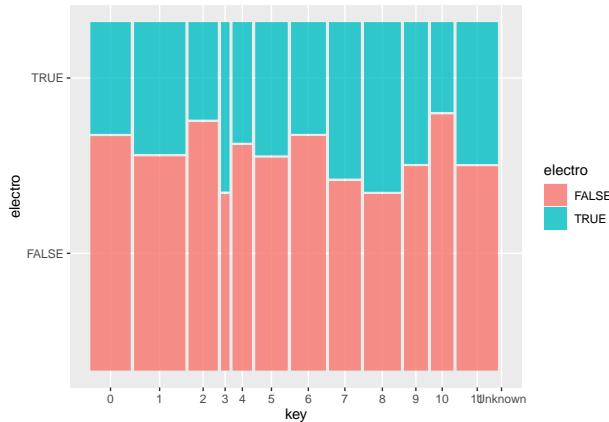


	0	1	2	3	4	5	6	7	8	9	10	11	Unknown
FALSE	652	767	496	95	297	473	566	413	448	331	390	583	0
TRUE	309	471	193	91	158	295	268	340	430	229	136	404	0

```

Warning in chisq.test(table(cat_var1, cat_var2), correct = FALSE): Chi-squared approximation may be incorrect

```

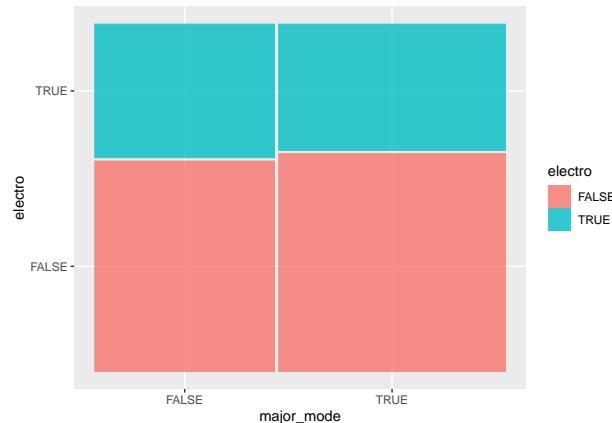
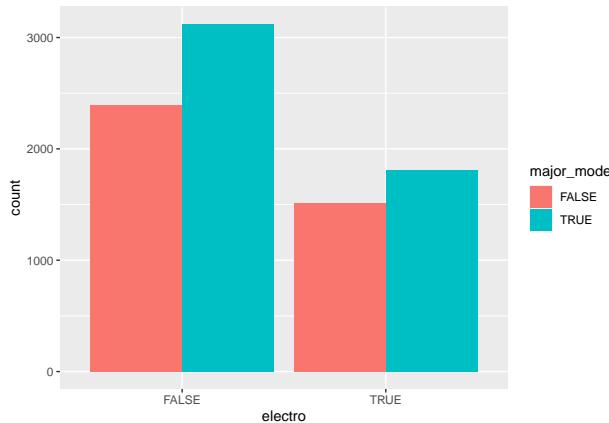


[1] "Chi-square test for electro and key"

Pearson's Chi-squared test

```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 12, p-value = NA
```

[1] "electro and major\_mode"



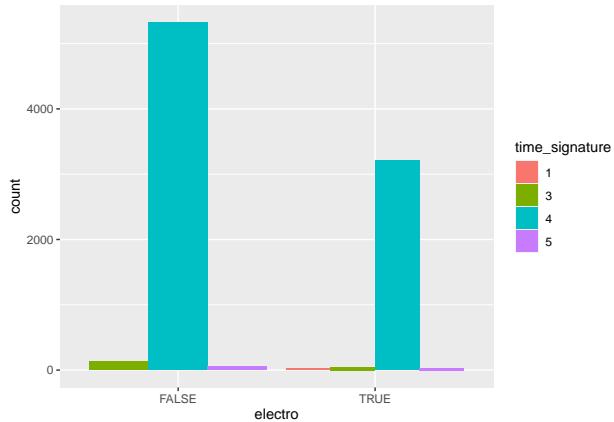
```
      FALSE  TRUE
FALSE  2391 3120
TRUE   1517 1807
```

[1] "Chi-square test for electro and major\_mode"

Pearson's Chi-squared test

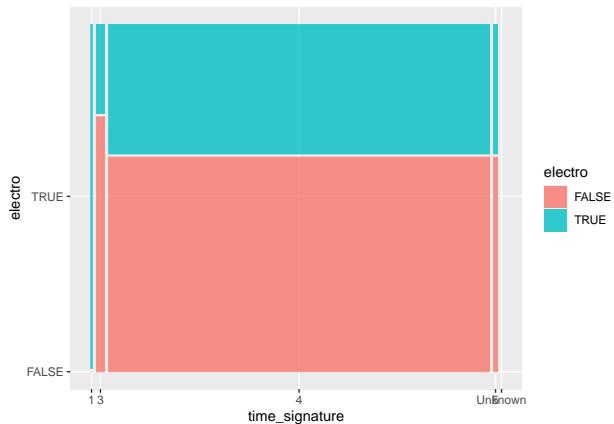
```
data: table(cat_var1, cat_var2)
X-squared = 4.2622, df = 1, p-value = 0.03897
```

[1] "electro and time\_signature"



	1	3	4	5	Unknown
FALSE	0	137	5321	53	0
TRUE	30	48	3214	32	0

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

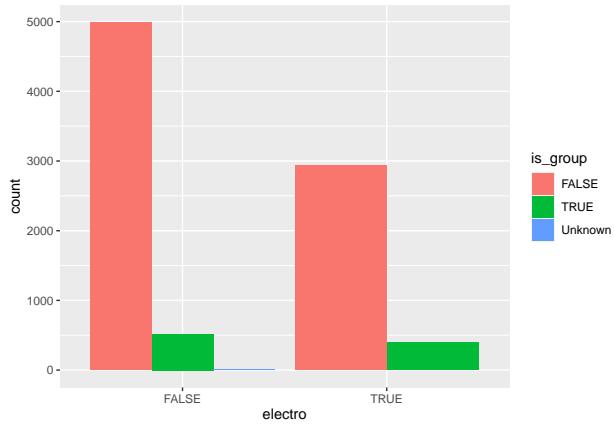


[1] "Chi-square test for electro and time\_signature"

Pearson's Chi-squared test

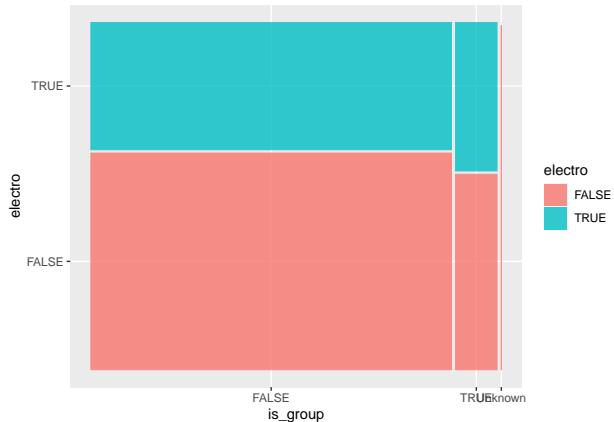
```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 4, p-value = NA
```

[1] "electro and is\_group"



```
      FALSE  TRUE Unknown
FALSE  4985  517     9
TRUE   2931  393     0
```

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

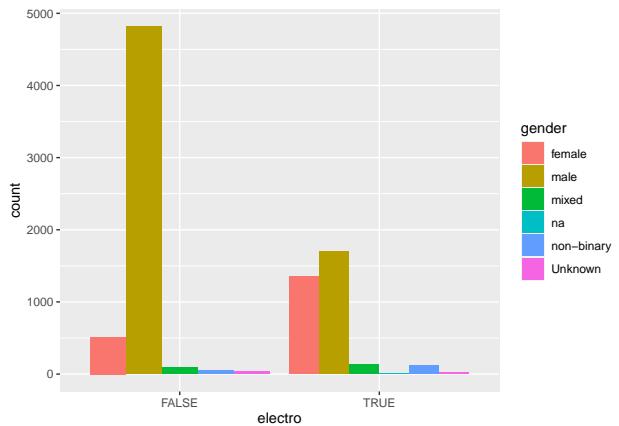


```
[1] "Chi-square test for electro and is_group"
```

Pearson's Chi-squared test

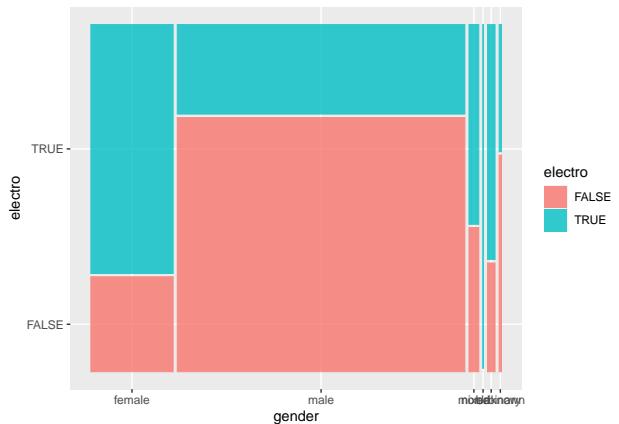
```
data: table(cat_var1, cat_var2)
X-squared = 18.633, df = 2, p-value = 8.993e-05
```

```
[1] "electro and gender"
```



	female	male	mixed	na	non-binary	Unknown
FALSE	514	4815	93	0	55	34
TRUE	1349	1699	129	8	119	20

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

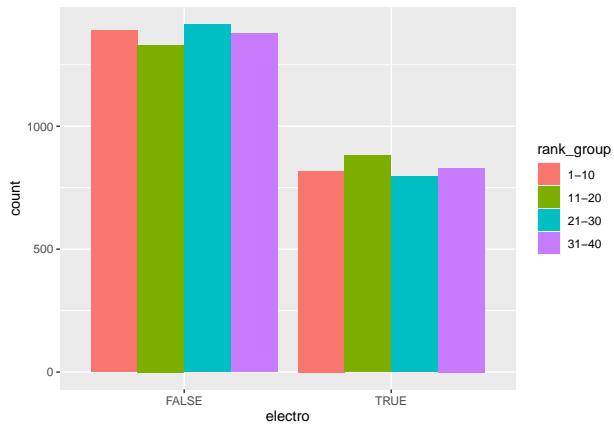


[1] "Chi-square test for electro and gender"

Pearson's Chi-squared test

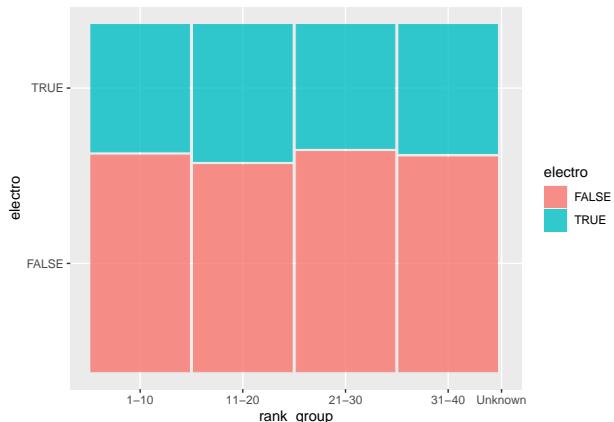
```
data: table(cat_var1, cat_var2)
X-squared = 1453.5, df = 5, p-value < 2.2e-16
```

[1] "electro and rank\_group"



	1-10	11-20	21-30	31-40	Unknown
FALSE	1390	1330	1413	1378	0
TRUE	818	880	796	830	0

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

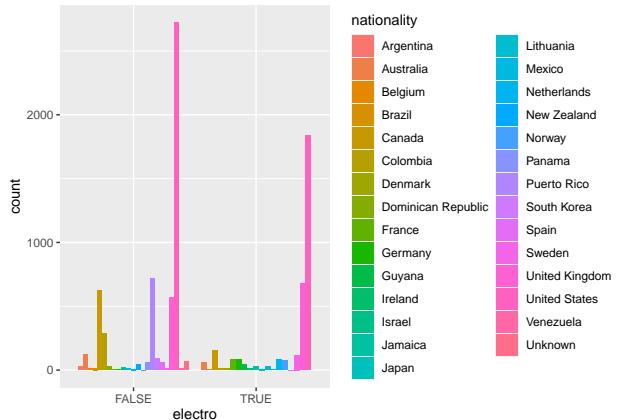


[1] "Chi-square test for electro and rank\_group"

Pearson's Chi-squared test

```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 4, p-value = NA
```

[1] "electro and nationality"

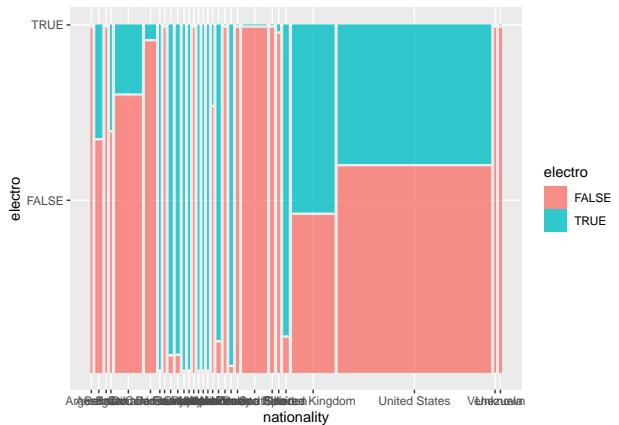


	Argentina	Australia	Belgium	Brazil	Canada	Colombia	Denmark	Dominican Republic	France	Germany	Guyana	Ireland	Israel	Jamaica	Japan
electro	27	119	15	16	622	289	0	0	26	4	4	0	0	19	0
nationality	0	58	0	7	153	12	13	0	86	82	43	14	0	26	9

	Lithuania	Mexico	Netherlands	New Zealand	Norway	Panama	Puerto Rico	South Korea	Spain	Sweden	United Kingdom	United States	Venezuela	Unknown
electro	0	10	8	47	1	62	715	0	0	0	2722	13	64	0
nationality	25	3	86	0	72	0	0	0	118	678	1838	0	0	0

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

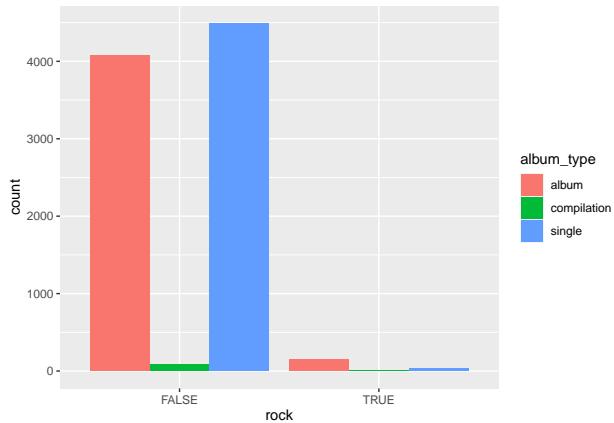


[1] "Chi-square test for electro and nationality"

Pearson's Chi-squared test

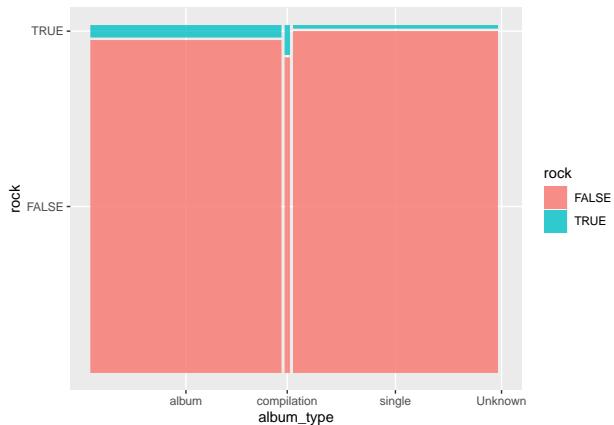
```
data: table(cat_var1, cat_var2)
X-squared = 1950.6, df = 28, p-value < 2.2e-16
```

```
[1] "rock and album_type"
```



	album	compilation	single	Unknown
FALSE	4073	86	4487	0
TRUE	144	8	37	0

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

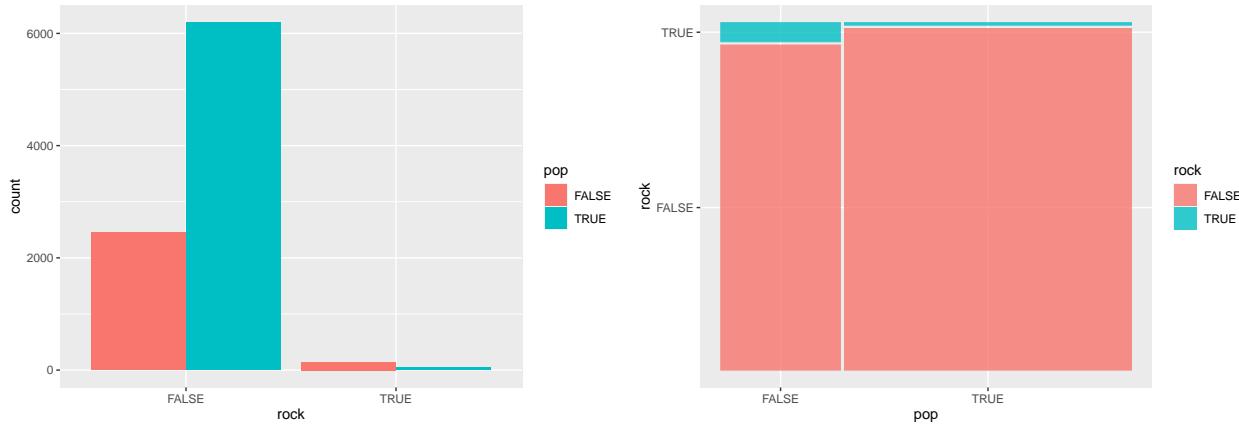


```
[1] "Chi-square test for rock and album_type"
```

Pearson's Chi-squared test

```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 3, p-value = NA
```

```
[1] "rock and pop"
```



```

      FALSE  TRUE
FALSE  2455  6191
TRUE    144   45
[1] "Chi-square test for rock and pop"

```

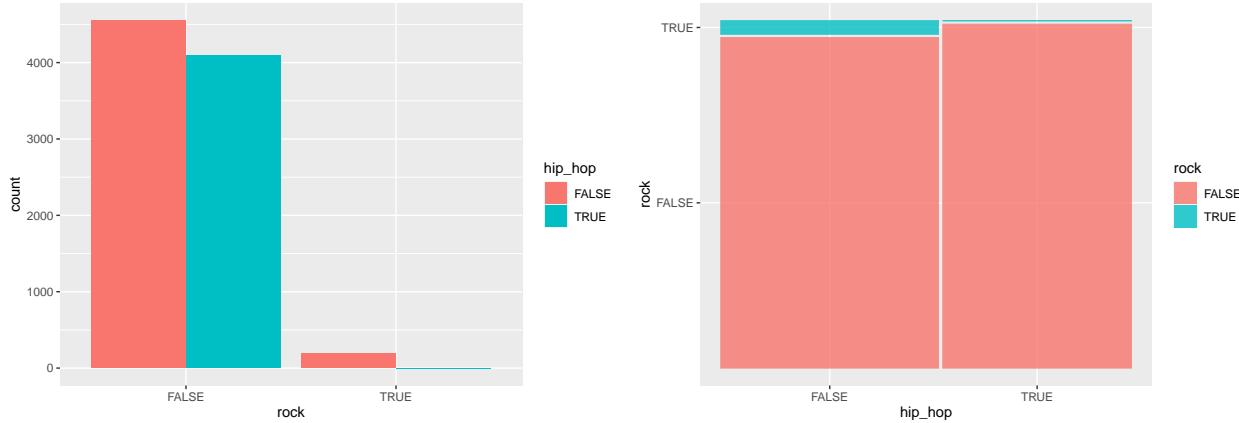
Pearson's Chi-squared test

```

data: table(cat_var1, cat_var2)
X-squared = 203.49, df = 1, p-value < 2.2e-16

```

[1] "rock and hip\_hop"



```

      FALSE  TRUE
FALSE  4549  4097
TRUE    187    2
[1] "Chi-square test for rock and hip_hop"

```

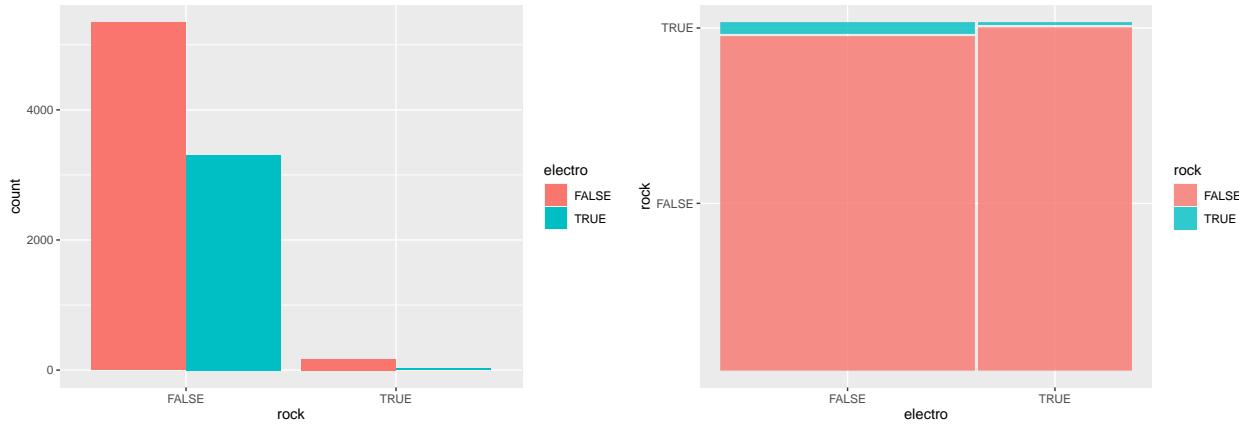
Pearson's Chi-squared test

```

data: table(cat_var1, cat_var2)
X-squared = 159.62, df = 1, p-value < 2.2e-16

```

[1] "rock and electro"



```

      FALSE  TRUE
FALSE  5340  3306
TRUE    171   18
[1] "Chi-square test for rock and electro"

```

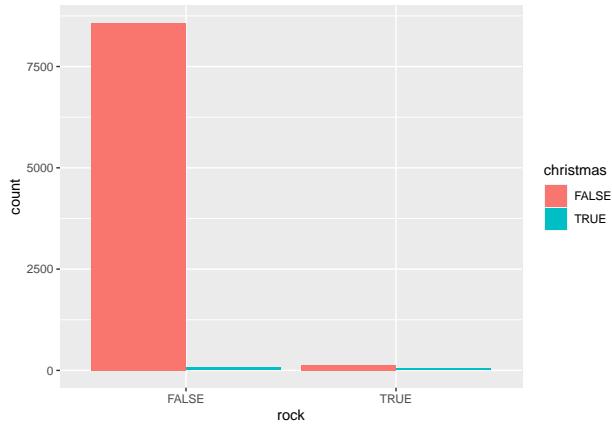
Pearson's Chi-squared test

```

data: table(cat_var1, cat_var2)
X-squared = 64.978, df = 1, p-value = 7.575e-16

```

[1] "rock and chritsmas"



```

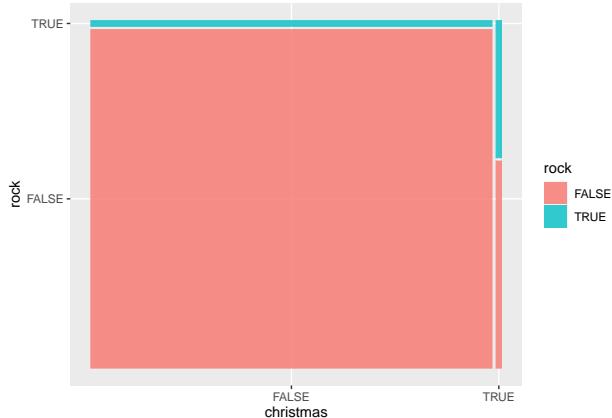
      FALSE  TRUE
FALSE  8575    71
TRUE    142    47

```

```

Warning in chisq.test(table(cat_var1, cat_var2), correct = FALSE): Chi-squared approximation may be incorrect

```

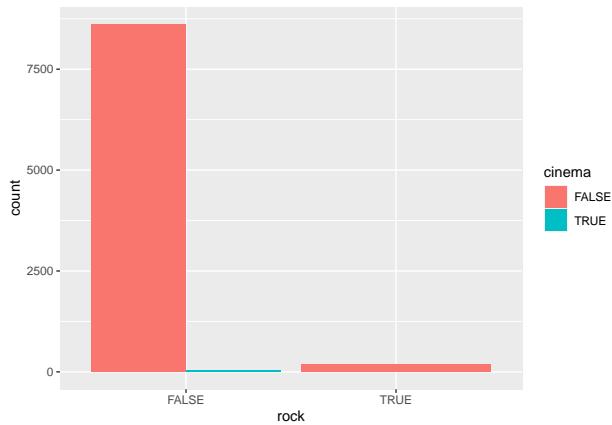


```
[1] "Chi-square test for rock and christmas"
```

Pearson's Chi-squared test

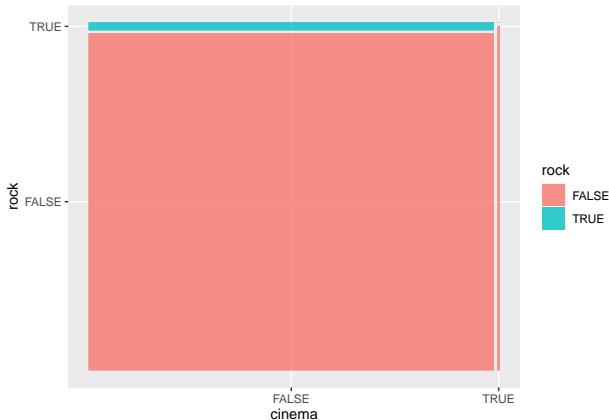
```
data: table(cat_var1, cat_var2)
X-squared = 811.6, df = 1, p-value < 2.2e-16
```

```
[1] "rock and cinema"
```



	FALSE	TRUE
FALSE	8608	38
TRUE	189	0

```
Warning in chisq.test(table(cat_var1, cat_var2), correct = FALSE): Chi-squared approximation may be incorrect
```

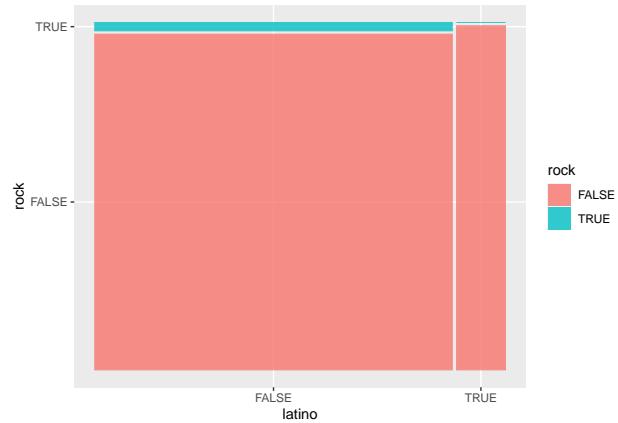
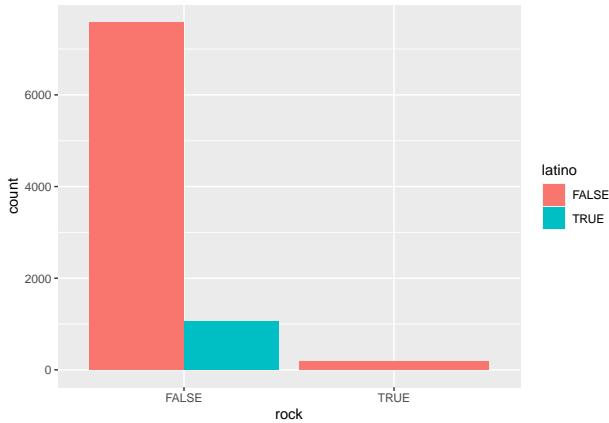


```
[1] "Chi-square test for rock and cinema"
```

Pearson's Chi-squared test

```
data: table(cat_var1, cat_var2)
X-squared = 0.83426, df = 1, p-value = 0.361
```

```
[1] "rock and latino"
```

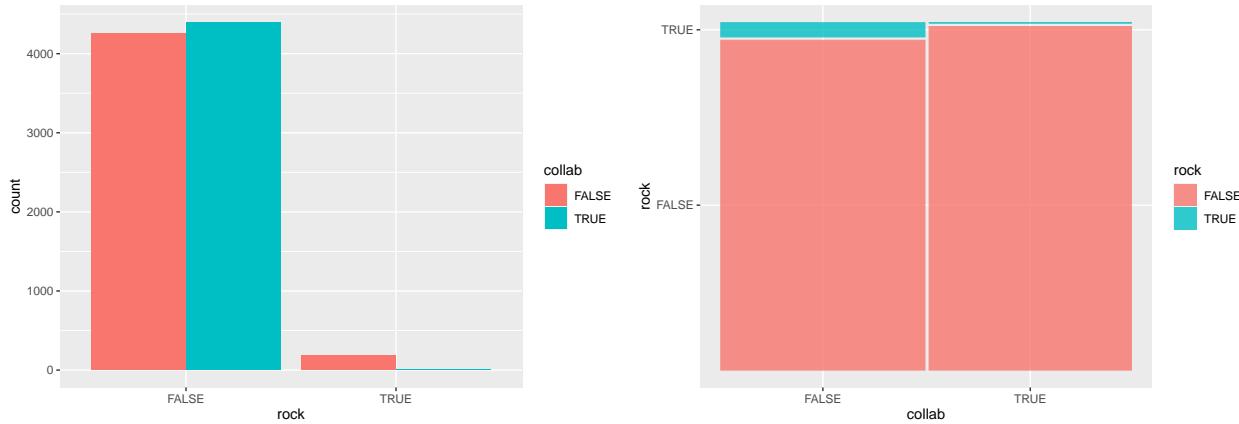


```
      FALSE  TRUE
FALSE  7580 1066
TRUE    189   0
[1] "Chi-square test for rock and latino"
```

Pearson's Chi-squared test

```
data: table(cat_var1, cat_var2)
X-squared = 26.5, df = 1, p-value = 2.635e-07
```

```
[1] "rock and collab"
```



```

      FALSE  TRUE
FALSE  4254 4392
TRUE    184   5
[1] "Chi-square test for rock and collab"

```

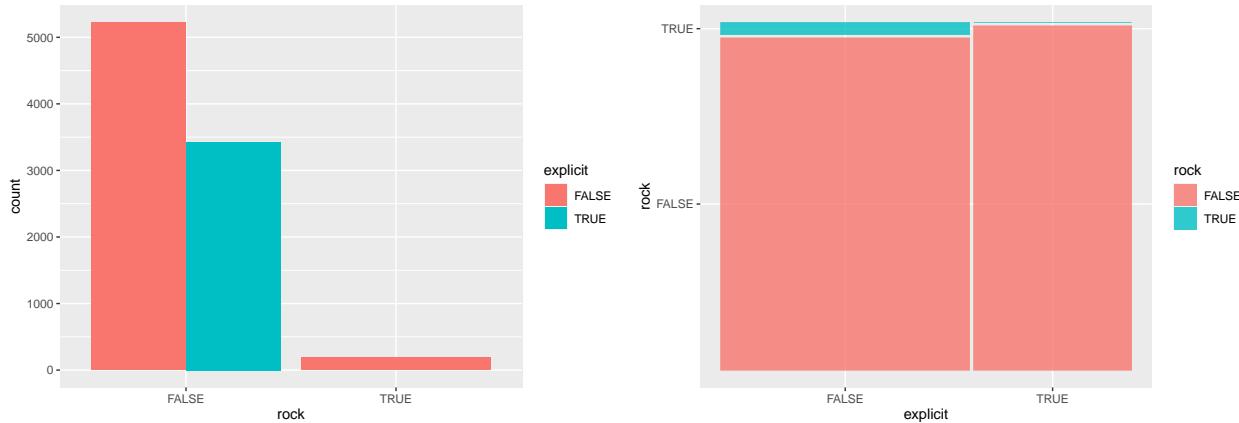
Pearson's Chi-squared test

```

data: table(cat_var1, cat_var2)
X-squared = 171.55, df = 1, p-value < 2.2e-16

```

```
[1] "rock and explicit"
```



```

      FALSE  TRUE
FALSE  5220 3426
TRUE    189   0
[1] "Chi-square test for rock and explicit"

```

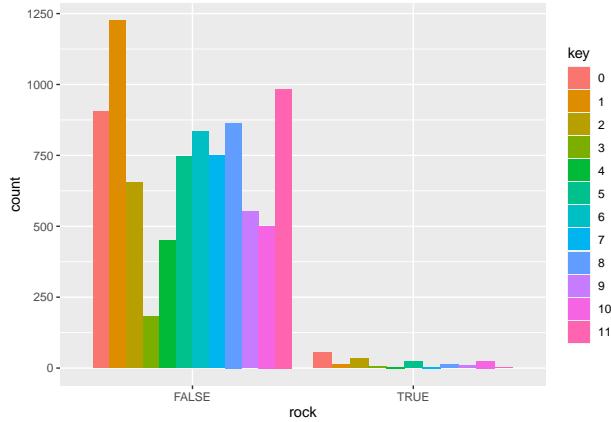
Pearson's Chi-squared test

```

data: table(cat_var1, cat_var2)
X-squared = 122.33, df = 1, p-value < 2.2e-16

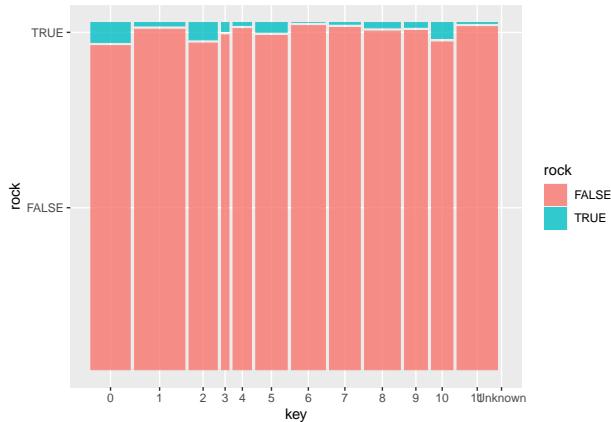
```

```
[1] "rock and key"
```



	0	1	2	3	4	5	6	7	8	9	10	11	Unknown
FALSE	905	1225	654	181	451	746	834	749	864	552	501	984	0
TRUE	56	13	35	5	4	22	0	4	14	8	25	3	0

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

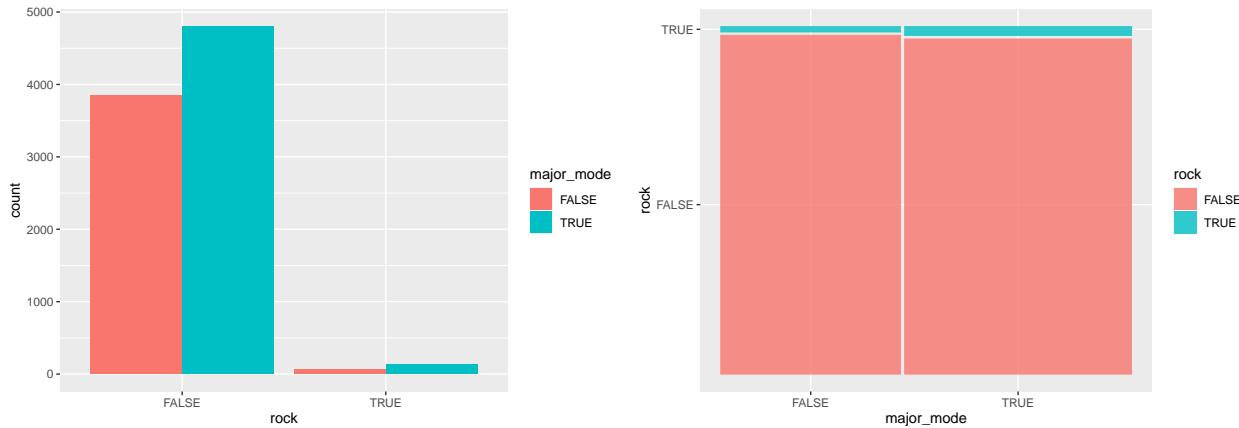


```
[1] "Chi-square test for rock and key"
```

```
Pearson's Chi-squared test
```

```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 12, p-value = NA
```

```
[1] "rock and major_mode"
```



```

      FALSE  TRUE
FALSE  3848 4798
TRUE     60 129
[1] "Chi-square test for rock and major_mode"

```

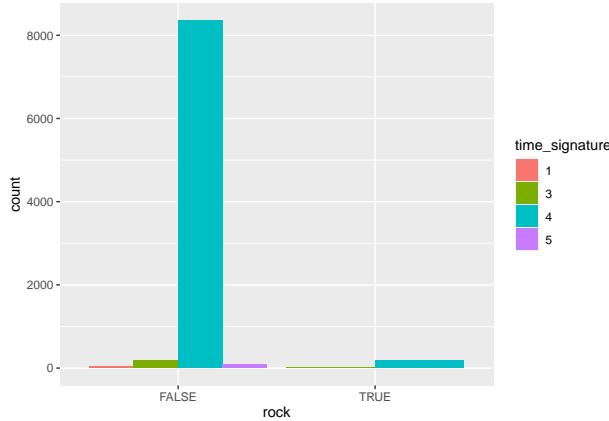
Pearson's Chi-squared test

```

data: table(cat_var1, cat_var2)
X-squared = 12.208, df = 1, p-value = 0.0004758

```

[1] "rock and time\_signature"

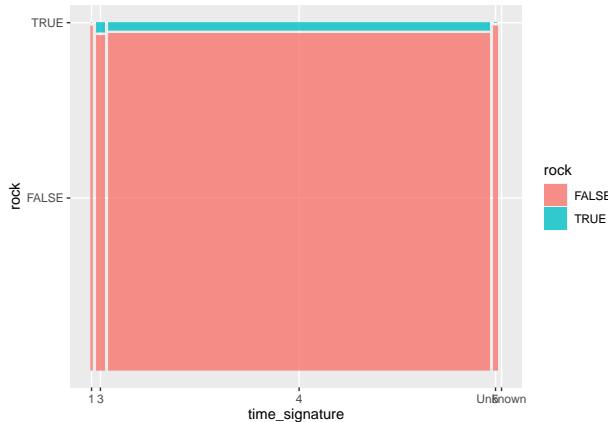


	1	3	4	5	Unknown
FALSE	30	180	8351	85	0
TRUE	0	5	184	0	0

```

Warning in chisq.test(table(cat_var1, cat_var2), correct = FALSE): Chi-squared
approximation may be incorrect

```

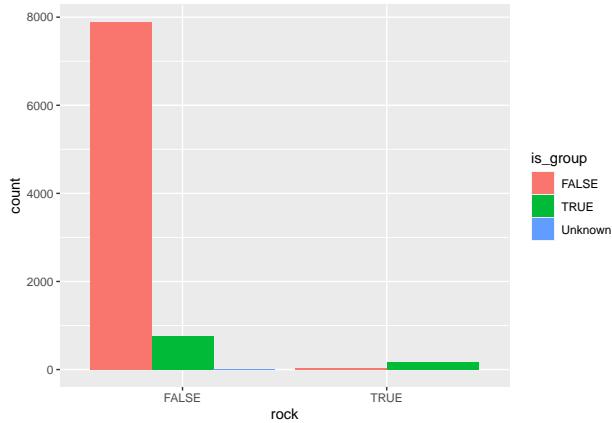


```
[1] "Chi-square test for rock and time_signature"
```

Pearson's Chi-squared test

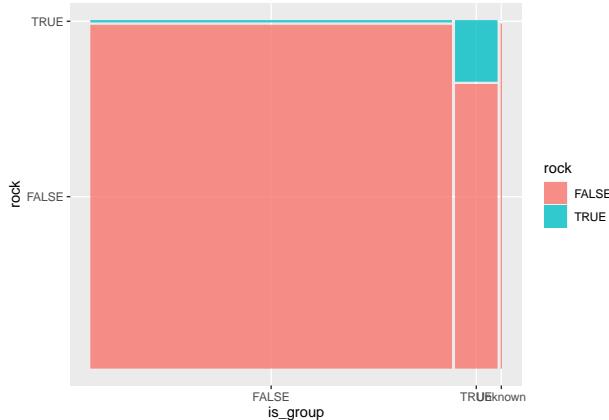
```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 4, p-value = NA
```

```
[1] "rock and is_group"
```



	FALSE	TRUE	Unknown
FALSE	7887	750	9
TRUE	29	160	0

```
Warning in chisq.test(table(cat_var1, cat_var2), correct = FALSE): Chi-squared approximation may be incorrect
```

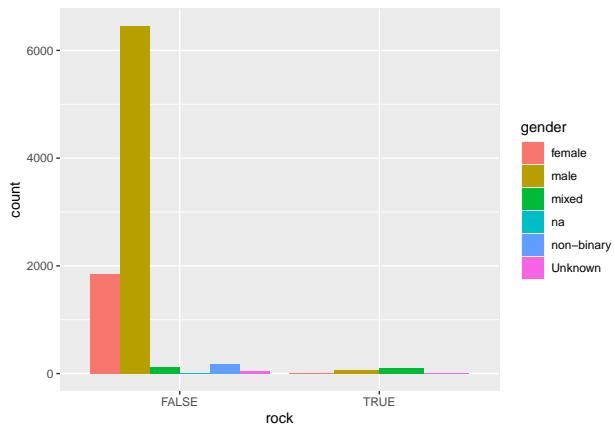


```
[1] "Chi-square test for rock and is_group"
```

Pearson's Chi-squared test

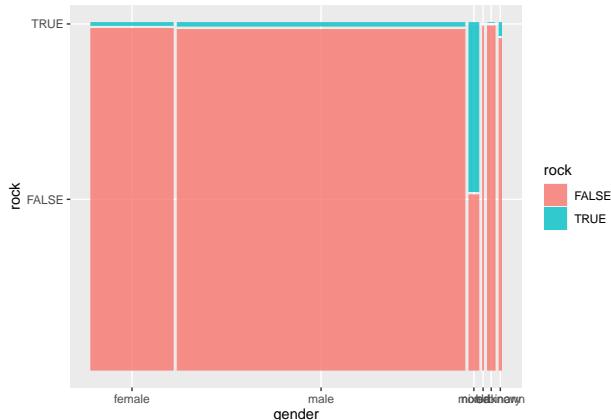
```
data: table(cat_var1, cat_var2)
X-squared = 1155.7, df = 2, p-value < 2.2e-16
```

```
[1] "rock and gender"
```



	female	male	mixed	na	non-binary	Unknown
FALSE	1849	6450	113	8	174	52
TRUE	14	64	109	0	0	2

```
Warning in chisq.test(table(cat_var1, cat_var2), correct = FALSE): Chi-squared approximation may be incorrect
```

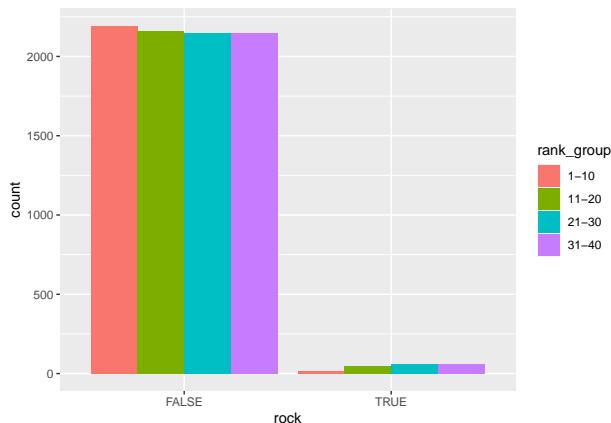


```
[1] "Chi-square test for rock and gender"
```

Pearson's Chi-squared test

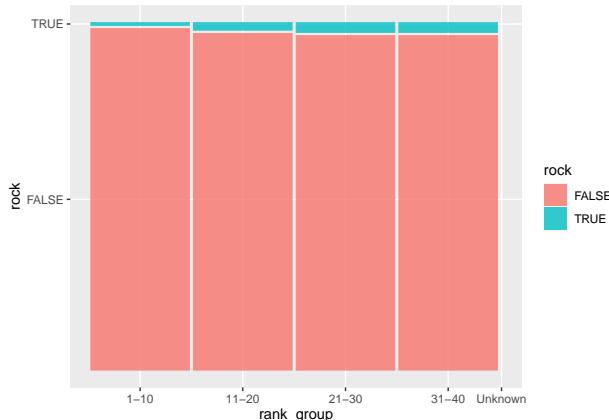
```
data: table(cat_var1, cat_var2)
X-squared = 2401.9, df = 5, p-value < 2.2e-16
```

```
[1] "rock and rank_group"
```



	1-10	11-20	21-30	31-40	Unknown
FALSE	2191	2162	2147	2146	0
TRUE	17	48	62	62	0

```
Warning in chisq.test(table(cat_var1, cat_var2), correct = FALSE): Chi-squared approximation may be incorrect
```

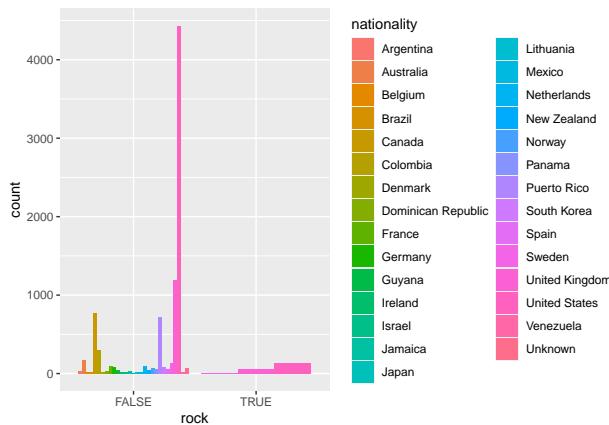


```
[1] "Chi-square test for rock and rank_group"
```

Pearson's Chi-squared test

```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 4, p-value = NA
```

```
[1] "rock and nationality"
```



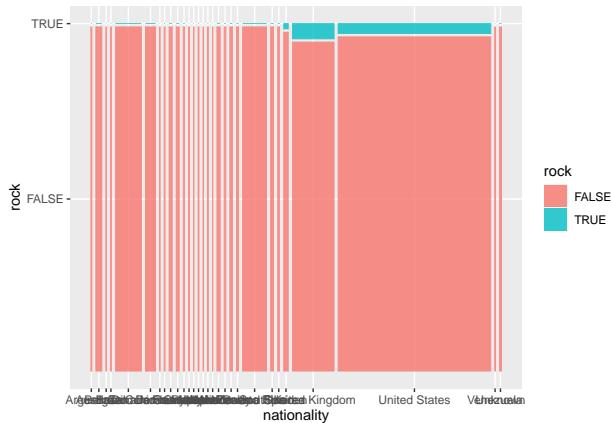
	Argentina	Australia	Belgium	Brazil	Canada	Colombia	Denmark
FALSE	27	177	15	23	775	301	13
TRUE	0	0	0	0	0	0	0

	Dominican Republic	France	Germany	Guyana	Ireland	Israel	Jamaica	Japan
FALSE	26	90	86	43	14	19	26	9
TRUE	0	0	0	0	0	0	0	0

	Lithuania	Mexico	Netherlands	New Zealand	Norway	Panama	Puerto Rico
FALSE	25	13	94	47	73	62	715
TRUE	0	0	0	0	0	0	0

	South Korea	Spain	Sweden	United Kingdom	United States	Venezuela	Unknown
FALSE	89	58	129	1192	4428	13	64
TRUE	0	0	2	55	132	0	0

```
Warning in chisq.test(table(cat_var1, cat_var2), correct = FALSE): Chi-squared approximation may be incorrect
```

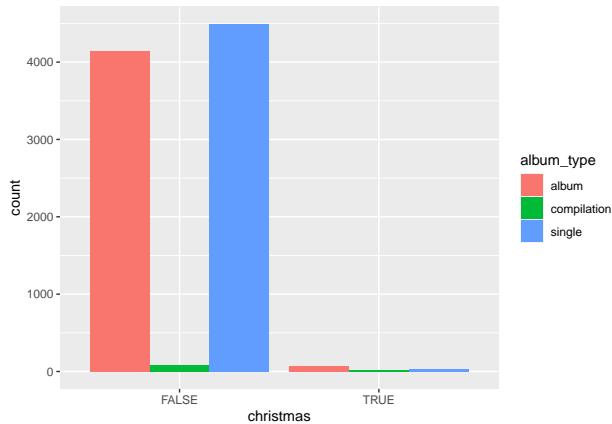


```
[1] "Chi-square test for rock and nationality"
```

```
Pearson's Chi-squared test
```

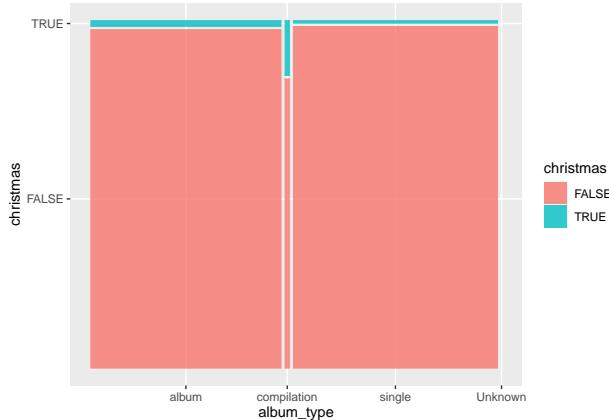
```
data: table(cat_var1, cat_var2)
X-squared = 106.73, df = 28, p-value = 4.003e-11
```

```
[1] "christmas and album_type"
```



	album	compilation	single	Unknown
FALSE	4147	79	4491	0
TRUE	70	15	33	0

```
Warning in chisq.test(table(cat_var1, cat_var2), correct = FALSE): Chi-squared approximation may be incorrect
```

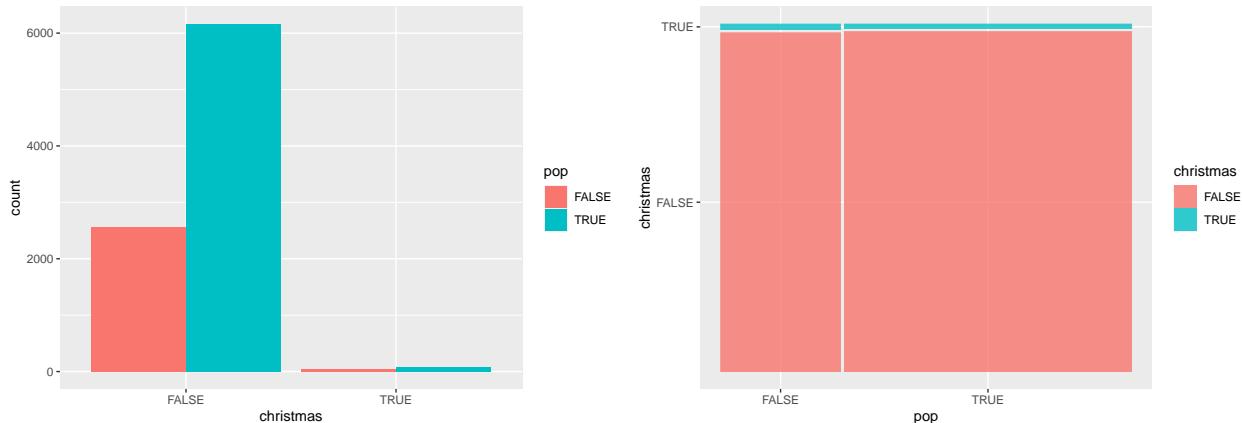


```
[1] "Chi-square test for christmas and album_type"
```

Pearson's Chi-squared test

```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 3, p-value = NA
```

```
[1] "christmas and pop"
```

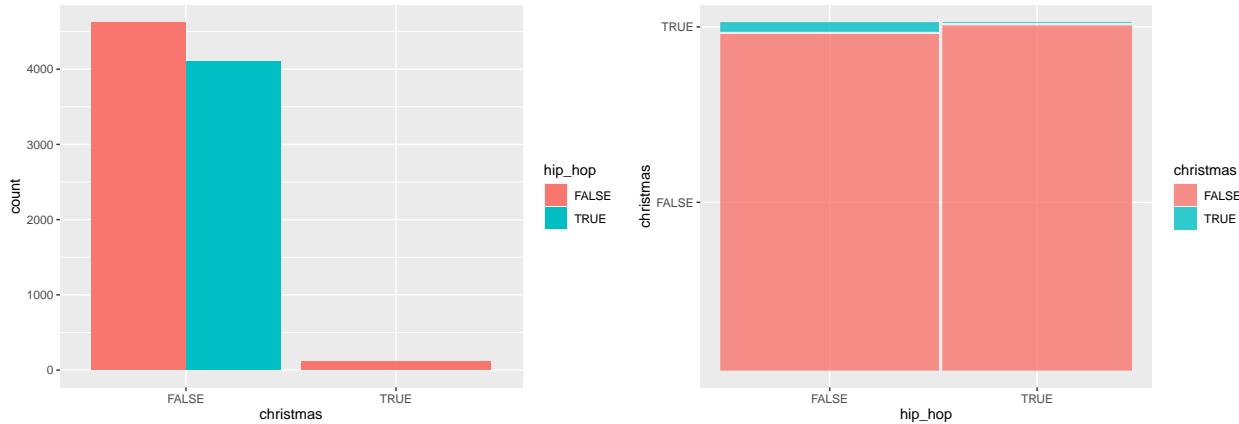


```
      FALSE  TRUE
FALSE  2558 6159
TRUE    41   77
[1] "Chi-square test for christmas and pop"
```

Pearson's Chi-squared test

```
data: table(cat_var1, cat_var2)
X-squared = 1.6355, df = 1, p-value = 0.2009
```

```
[1] "christmas and hip_hop"
```



```

      FALSE TRUE
FALSE  4618 4099
TRUE     118   0
[1] "Chi-square test for christmas and hip_hop"

```

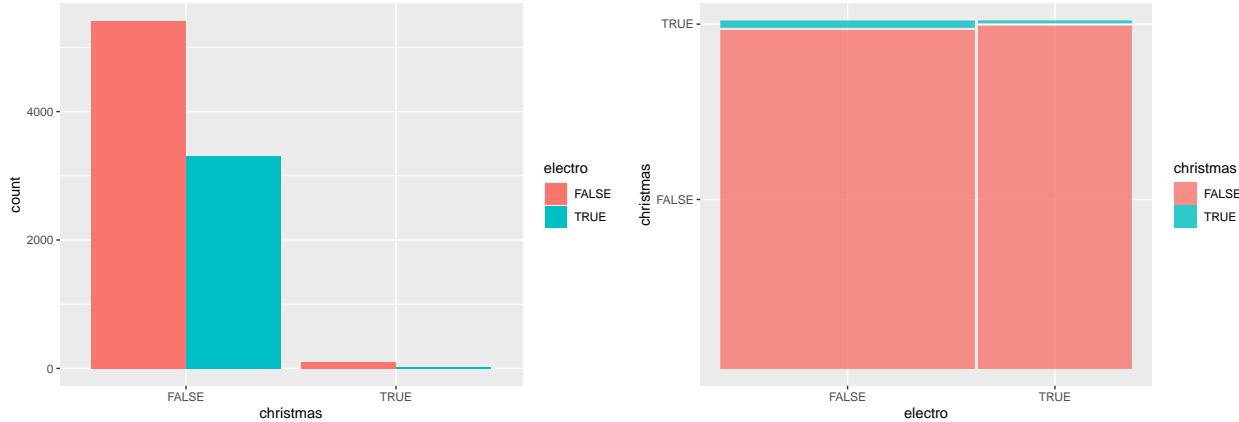
Pearson's Chi-squared test

```

data: table(cat_var1, cat_var2)
X-squared = 103.51, df = 1, p-value < 2.2e-16

```

[1] "christmas and electro"



```

      FALSE TRUE
FALSE  5411 3306
TRUE    100   18
[1] "Chi-square test for christmas and electro"

```

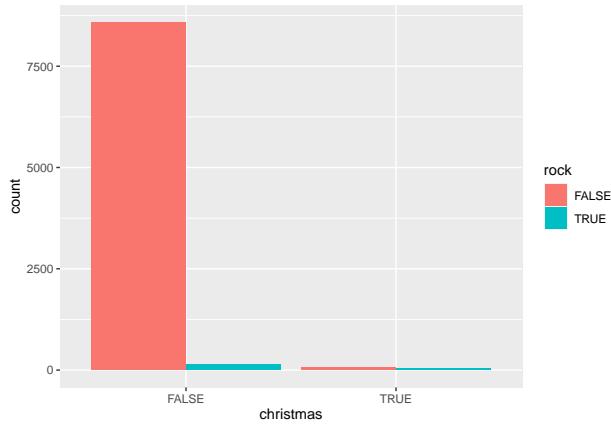
Pearson's Chi-squared test

```

data: table(cat_var1, cat_var2)
X-squared = 25.499, df = 1, p-value = 4.425e-07

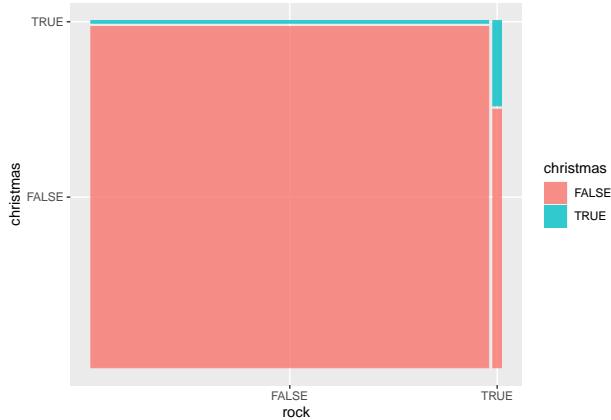
```

[1] "christmas and rock"



```
      FALSE  TRUE
FALSE  8575  142
TRUE     71   47
```

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

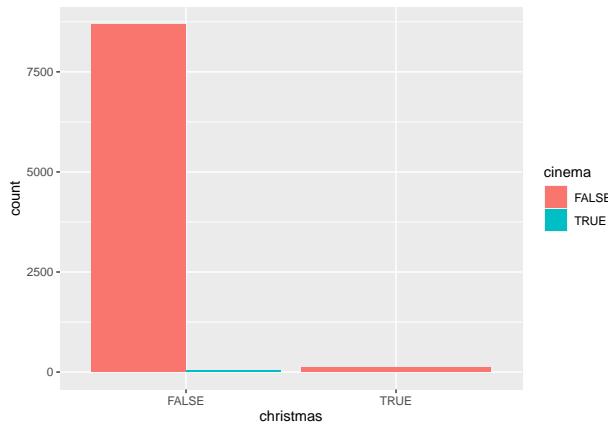


```
[1] "Chi-square test for christmas and rock"
```

Pearson's Chi-squared test

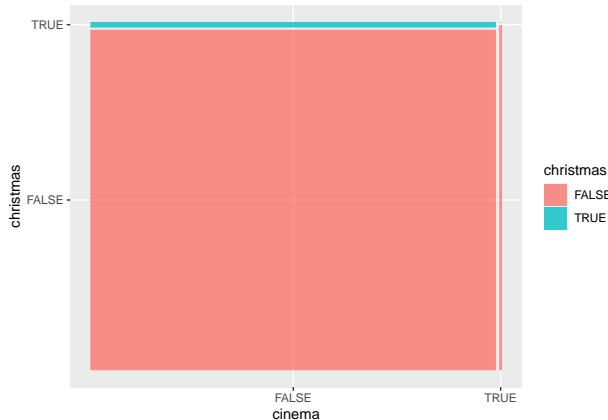
```
data: table(cat_var1, cat_var2)
X-squared = 811.6, df = 1, p-value < 2.2e-16
```

```
[1] "christmas and cinema"
```



	FALSE	TRUE
FALSE	8679	38
TRUE	118	0

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

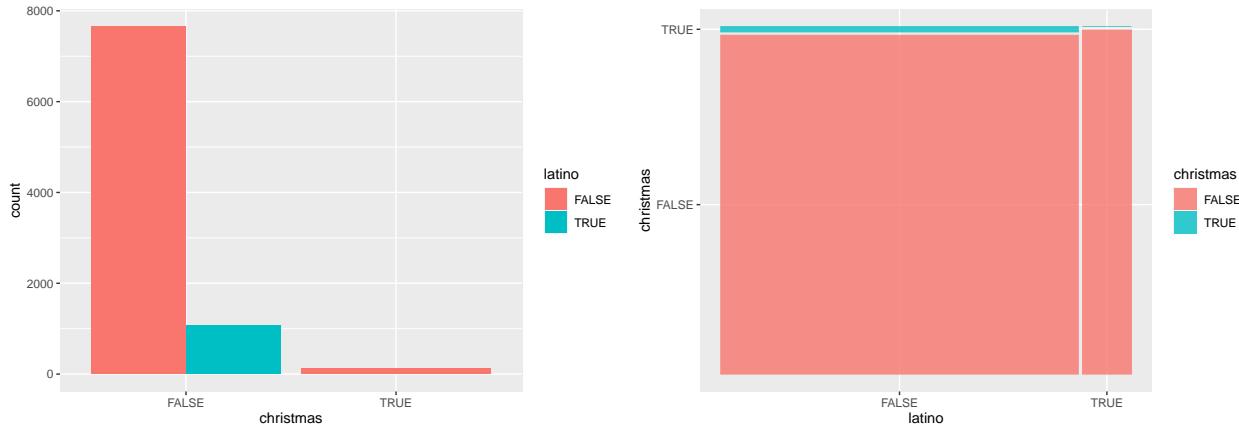


```
[1] "Chi-square test for christmas and cinema"
```

```
Pearson's Chi-squared test
```

```
data: table(cat_var1, cat_var2)
X-squared = 0.51662, df = 1, p-value = 0.4723
```

```
[1] "christmas and latino"
```



```

      FALSE  TRUE
FALSE  7651 1066
TRUE     118   0
[1] "Chi-square test for christmas and latino"

```

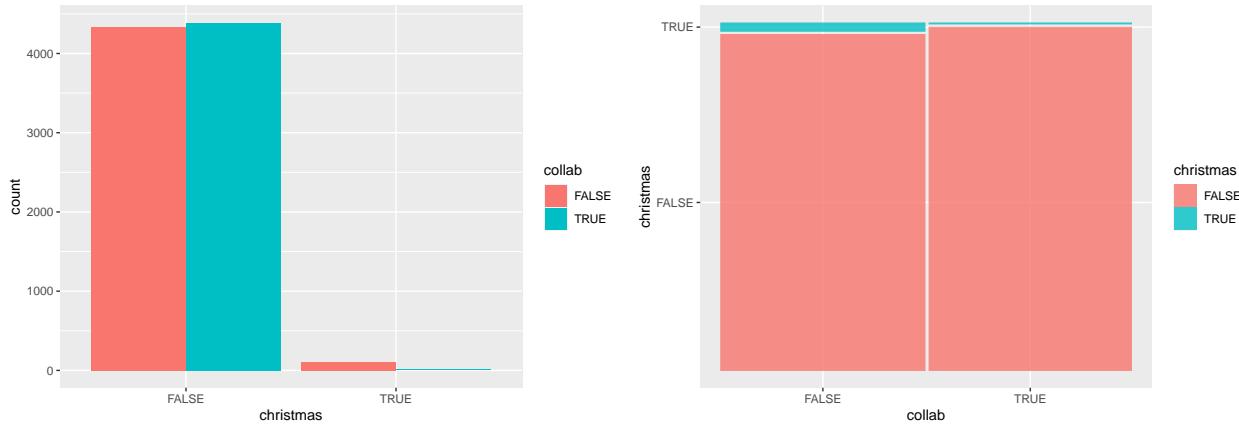
Pearson's Chi-squared test

```

data: table(cat_var1, cat_var2)
X-squared = 16.41, df = 1, p-value = 5.101e-05

```

[1] "christmas and collab"



```

      FALSE  TRUE
FALSE  4332 4385
TRUE    106   12
[1] "Chi-square test for christmas and collab"

```

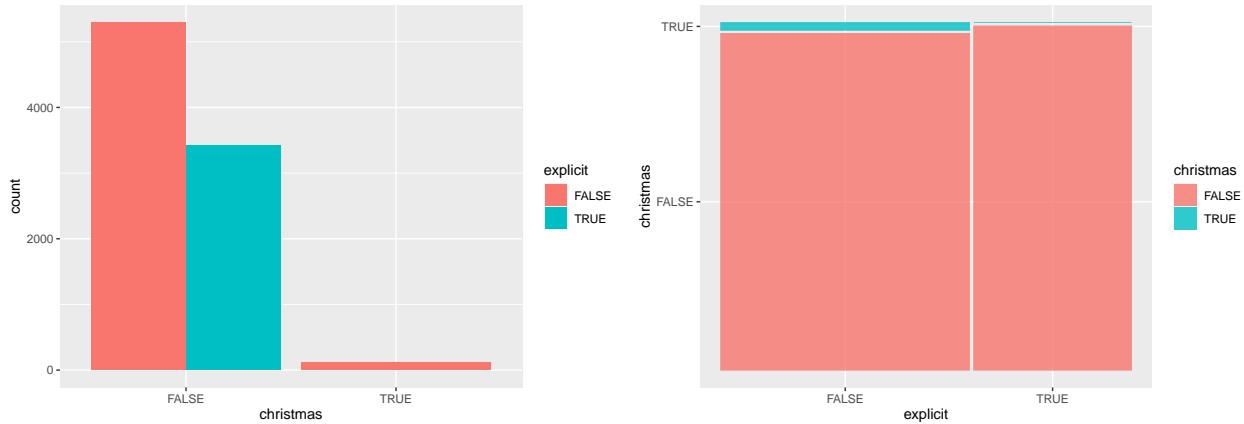
Pearson's Chi-squared test

```

data: table(cat_var1, cat_var2)
X-squared = 75.015, df = 1, p-value < 2.2e-16

```

[1] "christmas and explicit"



```

      FALSE  TRUE
FALSE  5291 3426
TRUE    118   0
[1] "Chi-square test for christmas and explicit"

```

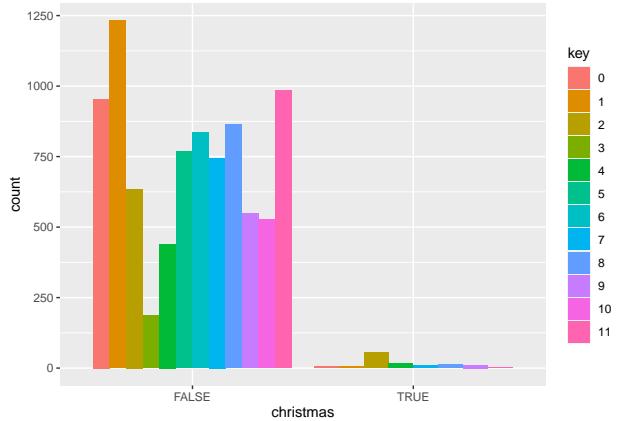
Pearson's Chi-squared test

```

data: table(cat_var1, cat_var2)
X-squared = 75.752, df = 1, p-value < 2.2e-16

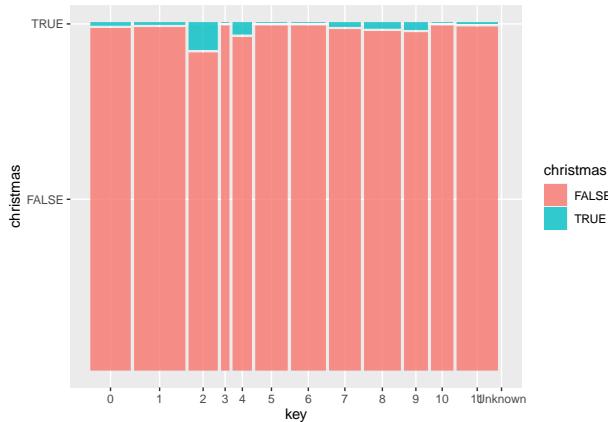
```

[1] "christmas and key"



	0	1	2	3	4	5	6	7	8	9	10	11	Unknown
FALSE	954	1232	635	186	440	768	834	745	864	549	526	984	0
TRUE	7	6	54	0	15	0	0	8	14	11	0	3	0

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

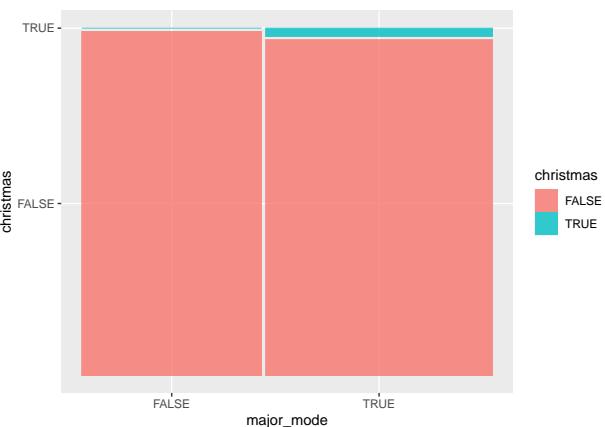
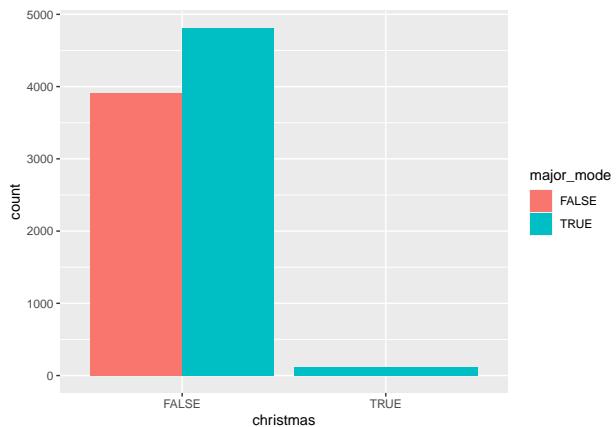


```
[1] "Chi-square test for christmas and key"
```

Pearson's Chi-squared test

```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 12, p-value = NA
```

```
[1] "christmas and major_mode"
```

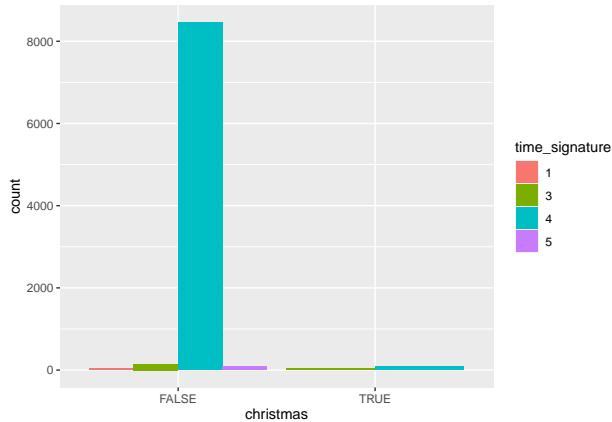


```
      FALSE  TRUE
FALSE   3908  4809
TRUE       0   118
[1] "Chi-square test for christmas and major_mode"
```

Pearson's Chi-squared test

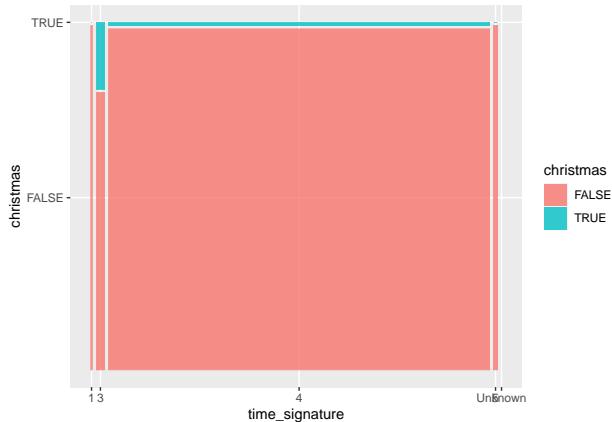
```
data: table(cat_var1, cat_var2)
X-squared = 94.862, df = 1, p-value < 2.2e-16
```

```
[1] "christmas and time_signature"
```



	1	3	4	5	Unknown
FALSE	30	149	8453	85	0
TRUE	0	36	82	0	0

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

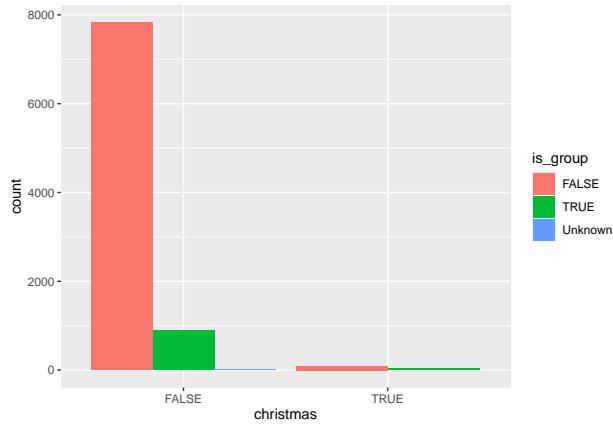


```
[1] "Chi-square test for christmas and time_signature"
```

Pearson's Chi-squared test

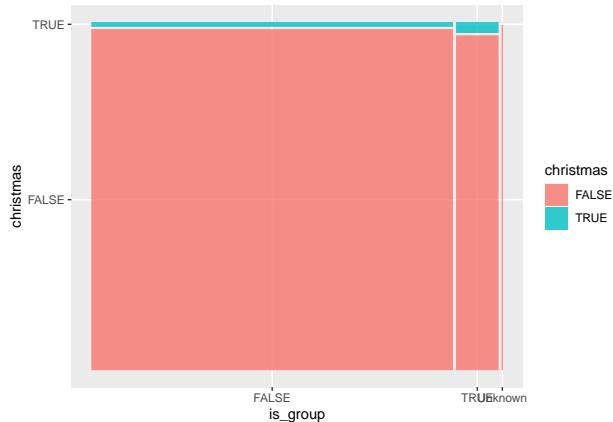
```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 4, p-value = NA
```

```
[1] "christmas and is_group"
```



	FALSE	TRUE	Unknown
FALSE	7825	883	9
TRUE	91	27	0

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

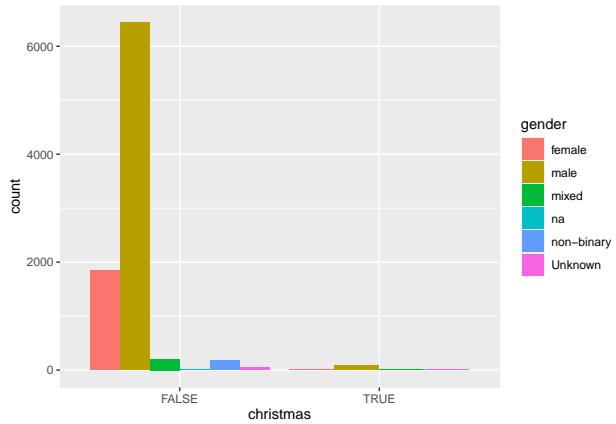


```
[1] "Chi-square test for christmas and is_group"
```

Pearson's Chi-squared test

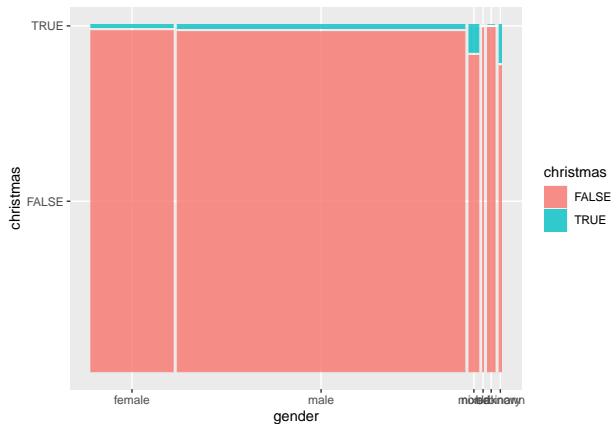
```
data: table(cat_var1, cat_var2)
X-squared = 20.581, df = 2, p-value = 3.396e-05
```

```
[1] "christmas and gender"
```



	female	male	mixed	na	non-binary	Unknown
FALSE	1846	6437	204	8	174	48
TRUE	17	77	18	0	0	6

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

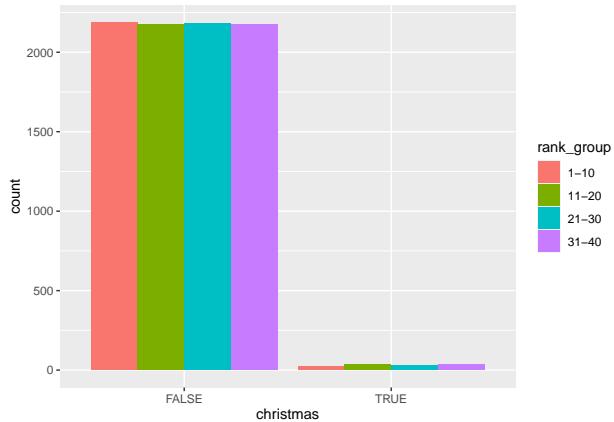


[1] "Chi-square test for christmas and gender"

Pearson's Chi-squared test

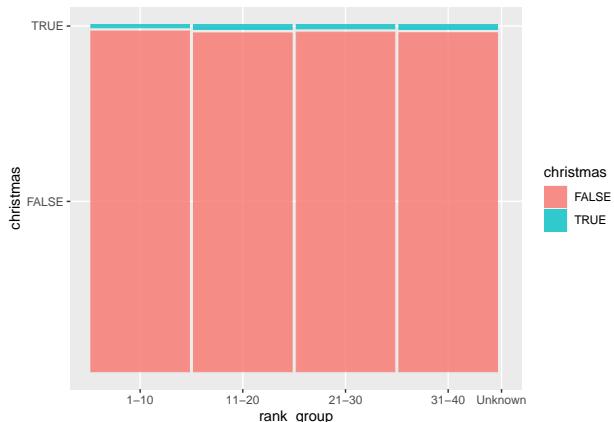
```
data: table(cat_var1, cat_var2)
X-squared = 122.59, df = 5, p-value < 2.2e-16
```

[1] "christmas and rank\_group"



	1-10	11-20	21-30	31-40	Unknown
FALSE	2186	2176	2180	2175	0
TRUE	22	34	29	33	0

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

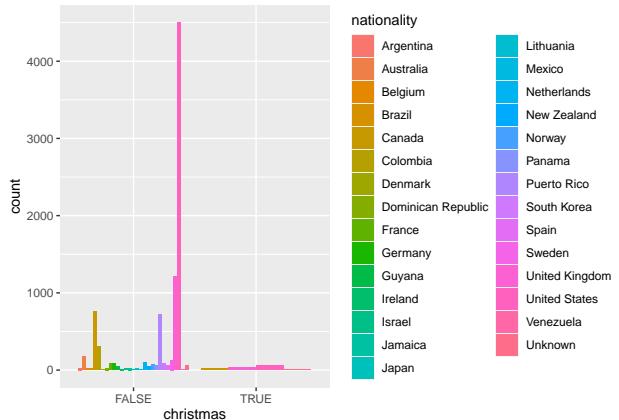


```
[1] "Chi-square test for christmas and rank_group"
```

Pearson's Chi-squared test

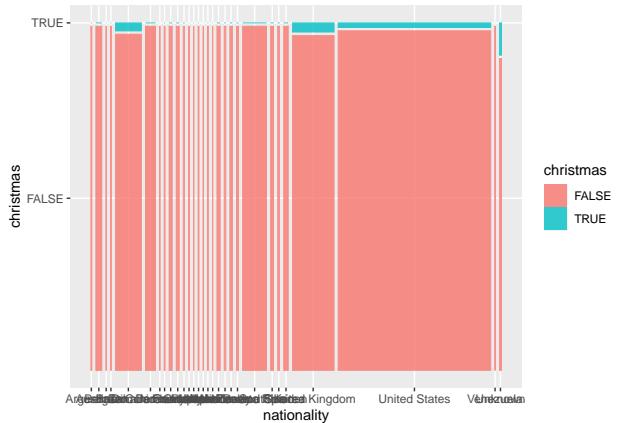
```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 4, p-value = NA
```

```
[1] "christmas and nationality"
```



	Argentina	Australia	Belgium	Brazil	Canada	Colombia	Denmark	Dominican Republic	France	Germany	Guyana	Ireland	Israel	Jamaica	Japan
christmas	27	177	15	23	757	301	13								
christmas	0	0	0	0	18	0	0								
	Dominican Republic	France	Germany	Guyana	Ireland	Israel	Jamaica	Japan	Lithuania	Mexico	Netherlands	New Zealand	Norway	Panama	Puerto Rico
christmas	26	90	86	43	14	19	26	9	25	13	94	47	73	62	715
christmas	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	South Korea	Spain	Sweden	United Kingdom	United States	Venezuela	Unknown								
christmas	89	58	131	1214	4499	13	58								
christmas	0	0	0	33	61	0	6								

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

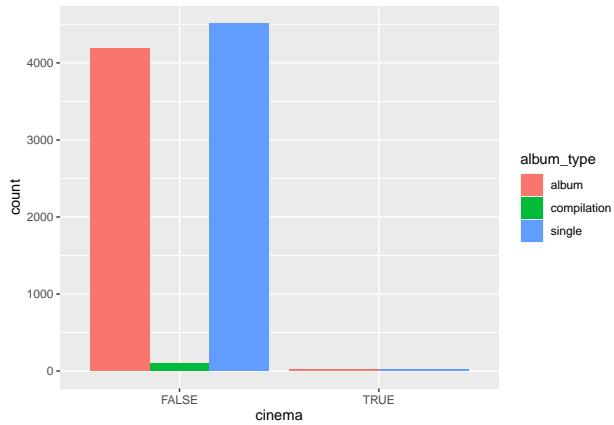


[1] "Chi-square test for christmas and nationality"

Pearson's Chi-squared test

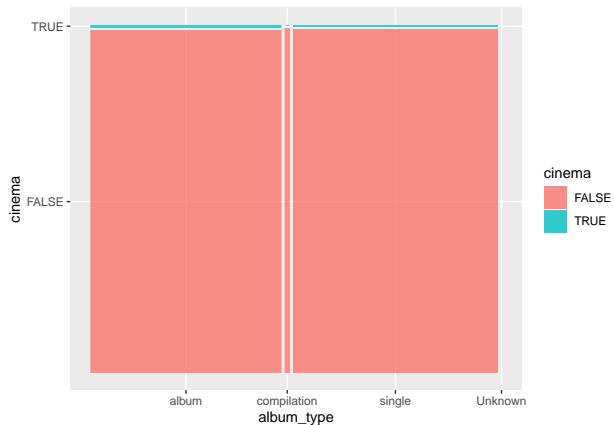
```
data: table(cat_var1, cat_var2)
X-squared = 83.009, df = 28, p-value = 2.358e-07
```

```
[1] "cinema and album_type"
```



	album	compilation	single	Unknown
FALSE	4193	94	4510	0
TRUE	24	0	14	0

```
Warning in chisq.test(table(cat_var1, cat_var2), correct = FALSE): Chi-squared approximation may be incorrect
```

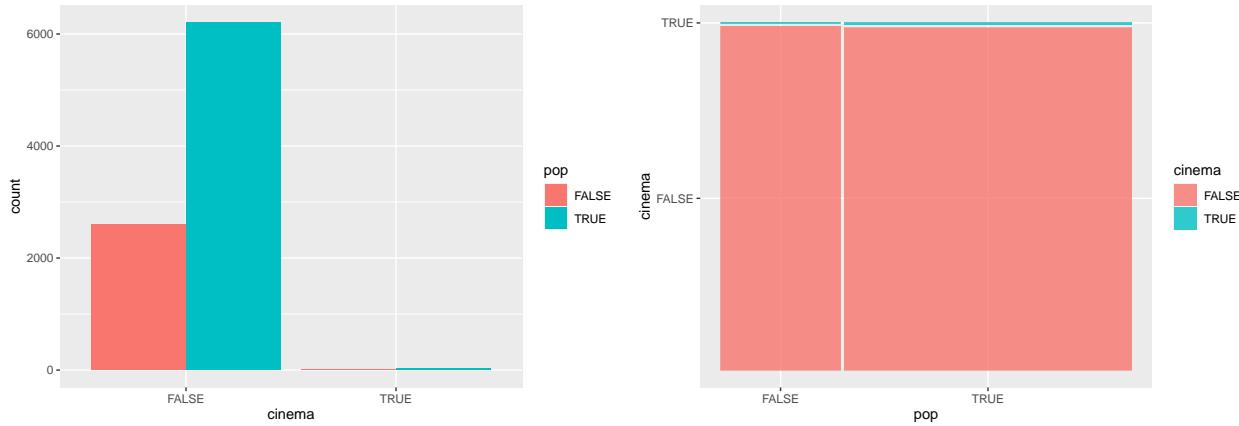


```
[1] "Chi-square test for cinema and album_type"
```

Pearson's Chi-squared test

```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 3, p-value = NA
```

```
[1] "cinema and pop"
```



```

      FALSE  TRUE
FALSE  2595  6202
TRUE      4    34
[1] "Chi-square test for cinema and pop"

```

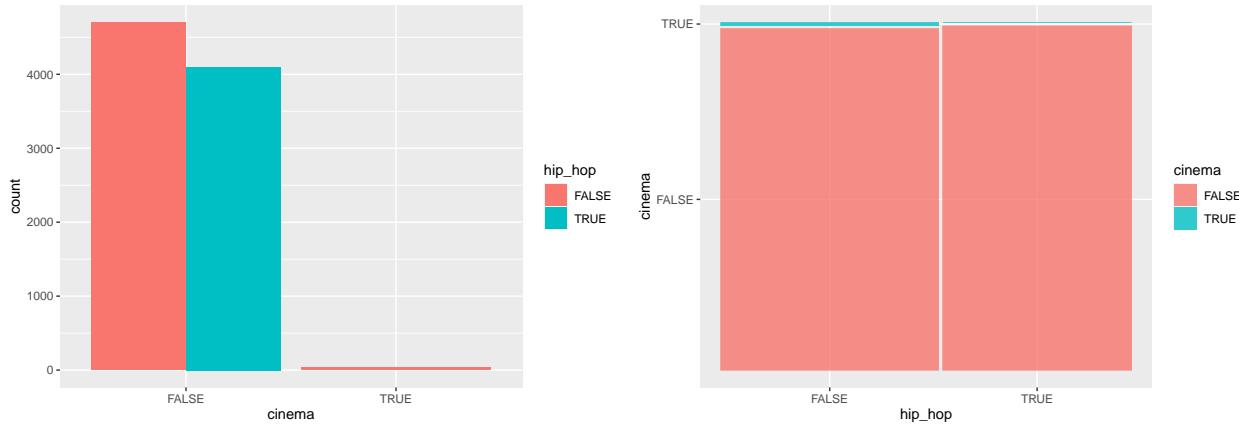
Pearson's Chi-squared test

```

data: table(cat_var1, cat_var2)
X-squared = 6.5593, df = 1, p-value = 0.01043

```

[1] "cinema and hip\_hop"



```

      FALSE  TRUE
FALSE  4698  4099
TRUE      38    0
[1] "Chi-square test for cinema and hip_hop"

```

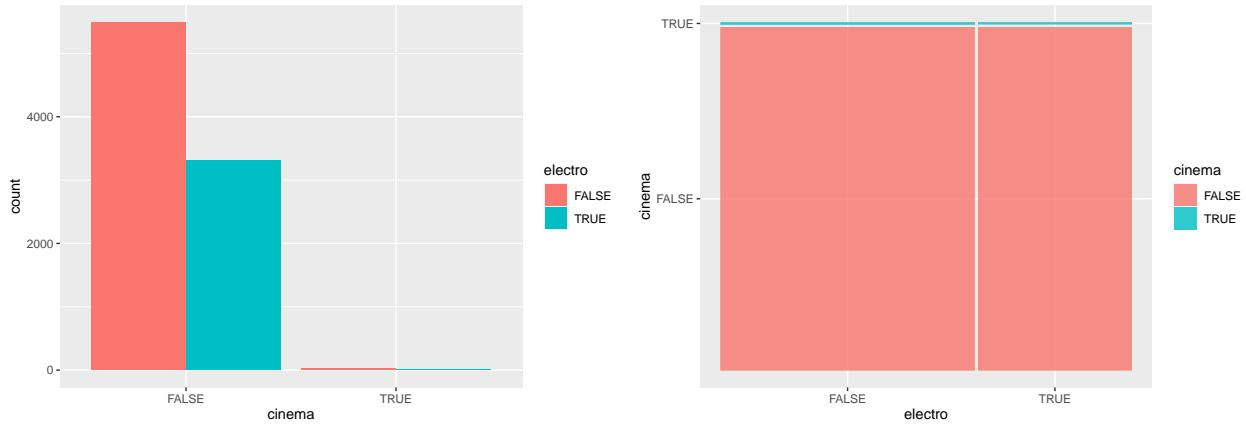
Pearson's Chi-squared test

```

data: table(cat_var1, cat_var2)
X-squared = 33.031, df = 1, p-value = 9.07e-09

```

[1] "cinema and electro"



```

      FALSE  TRUE
FALSE  5486  3311
TRUE     25    13
[1] "Chi-square test for cinema and electro"

```

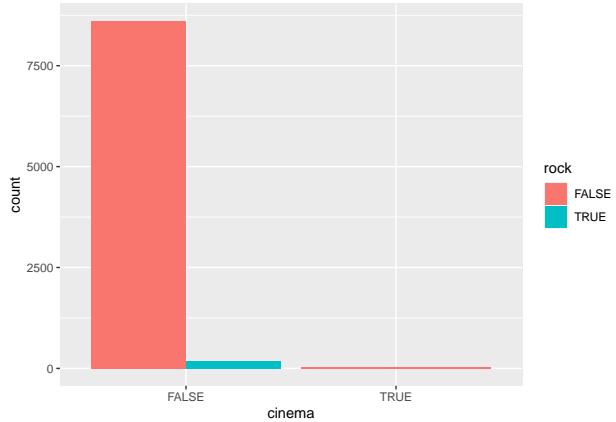
Pearson's Chi-squared test

```

data: table(cat_var1, cat_var2)
X-squared = 0.18938, df = 1, p-value = 0.66634

```

[1] "cinema and rock"



```

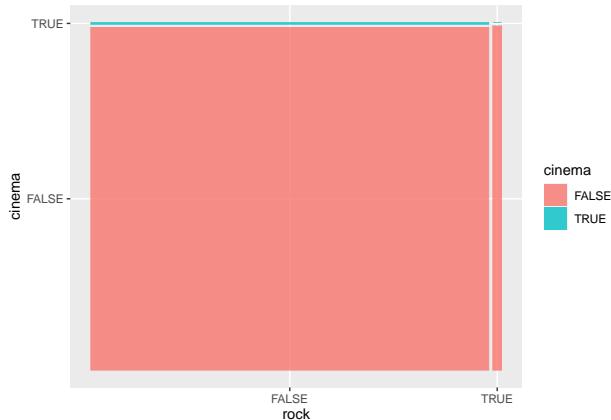
      FALSE  TRUE
FALSE  8608  189
TRUE     38    0

```

```

Warning in chisq.test(table(cat_var1, cat_var2), correct = FALSE): Chi-squared
approximation may be incorrect

```

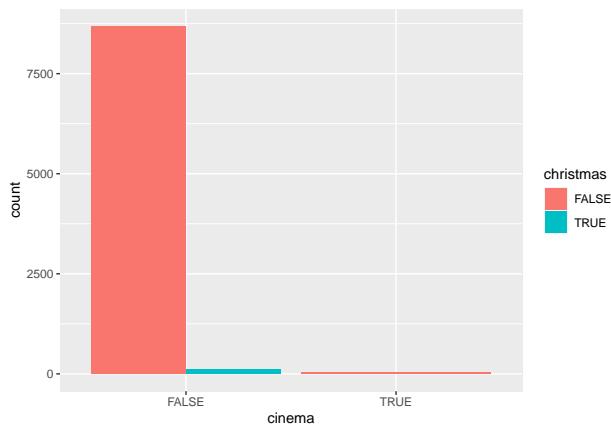


```
[1] "Chi-square test for cinema and rock"
```

Pearson's Chi-squared test

```
data: table(cat_var1, cat_var2)
X-squared = 0.83426, df = 1, p-value = 0.361
```

```
[1] "cinema and christmas"
```



	FALSE	TRUE
FALSE	8679	118
TRUE	38	0

```
Warning in chisq.test(table(cat_var1, cat_var2), correct = FALSE): Chi-squared approximation may be incorrect
```

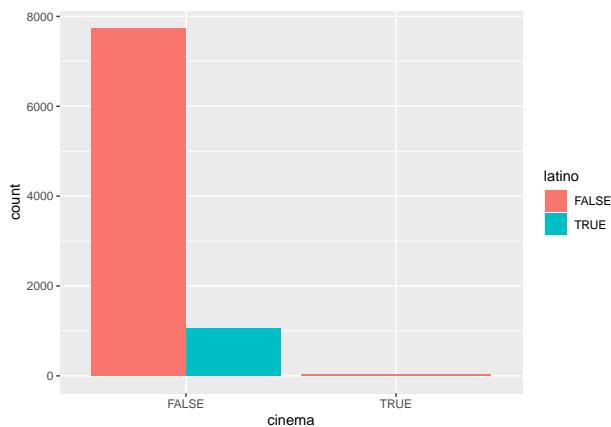


```
[1] "Chi-square test for cinema and christmas"
```

Pearson's Chi-squared test

```
data: table(cat_var1, cat_var2)
X-squared = 0.51662, df = 1, p-value = 0.4723
```

```
[1] "cinema and latino"
```



	FALSE	TRUE
FALSE	7731	1066
TRUE	38	0

```
Warning in chisq.test(table(cat_var1, cat_var2), correct = FALSE): Chi-squared approximation may be incorrect
```

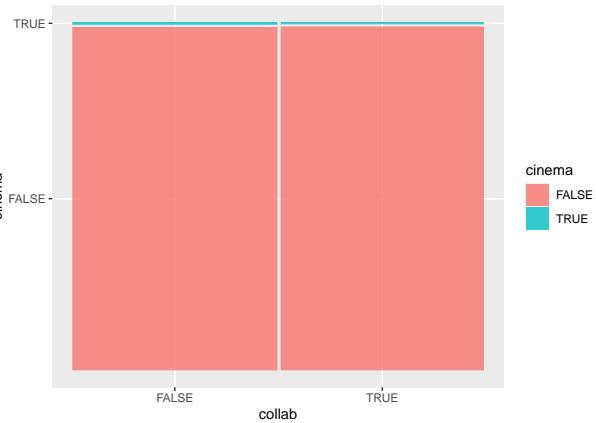
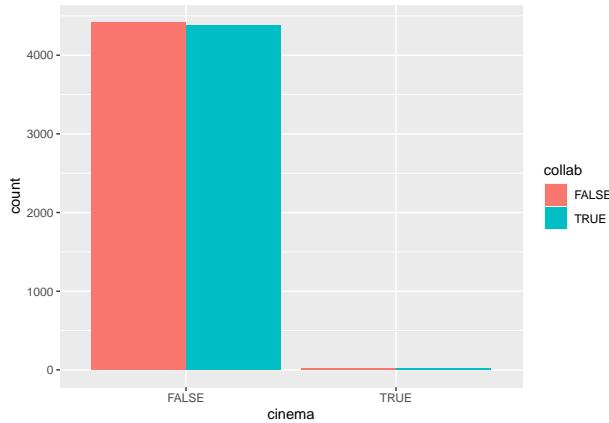


[1] "Chi-square test for cinema and latino"

Pearson's Chi-squared test

```
data: table(cat_var1, cat_var2)
X-squared = 5.2366, df = 1, p-value = 0.02212
```

[1] "cinema and collab"

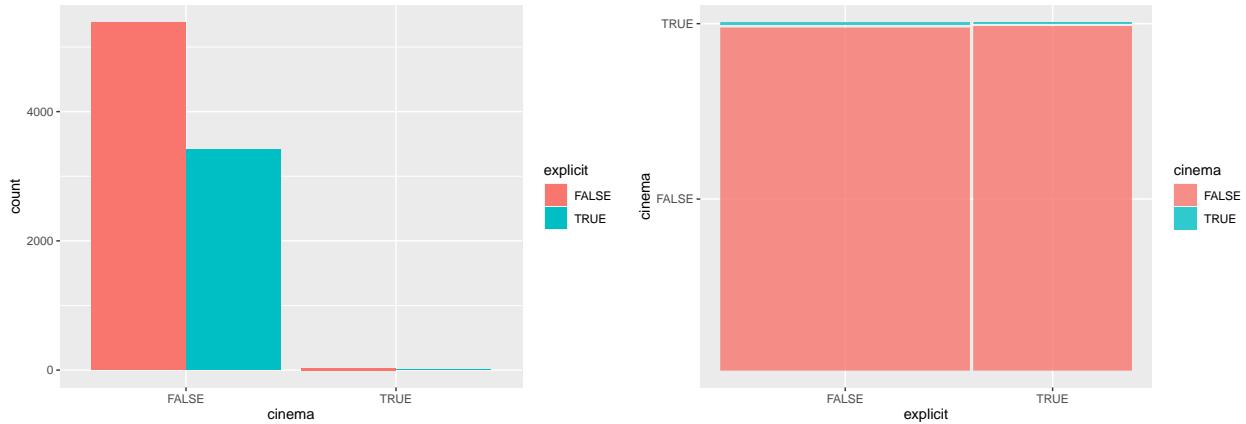


```
      FALSE  TRUE
FALSE  4416 4381
TRUE    22   16
[1] "Chi-square test for cinema and collab"
```

Pearson's Chi-squared test

```
data: table(cat_var1, cat_var2)
X-squared = 0.89637, df = 1, p-value = 0.3438
```

[1] "cinema and explicit"



```

      FALSE  TRUE
FALSE  5377 3420
TRUE     32    6
[1] "Chi-square test for cinema and explicit"

```

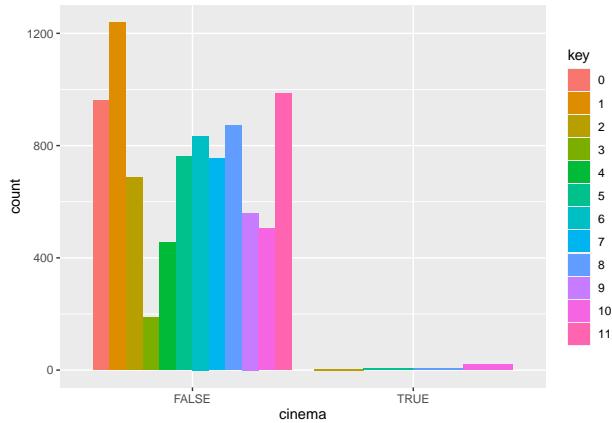
Pearson's Chi-squared test

```

data: table(cat_var1, cat_var2)
X-squared = 8.4952, df = 1, p-value = 0.003561

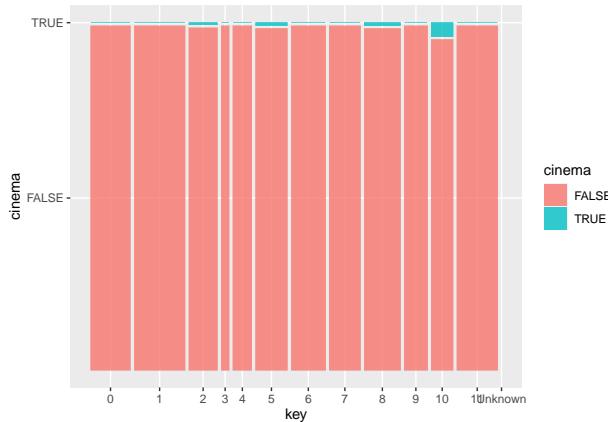
```

[1] "cinema and key"



	0	1	2	3	4	5	6	7	8	9	10	11	Unknown
FALSE	961	1238	685	186	455	762	834	753	871	560	505	987	0
TRUE	0	0	4	0	0	6	0	0	7	0	21	0	0

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

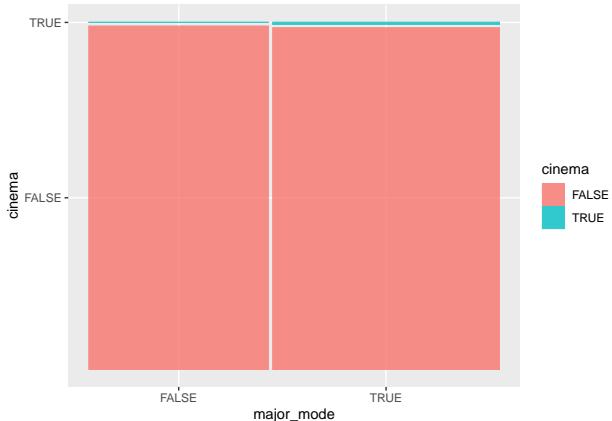
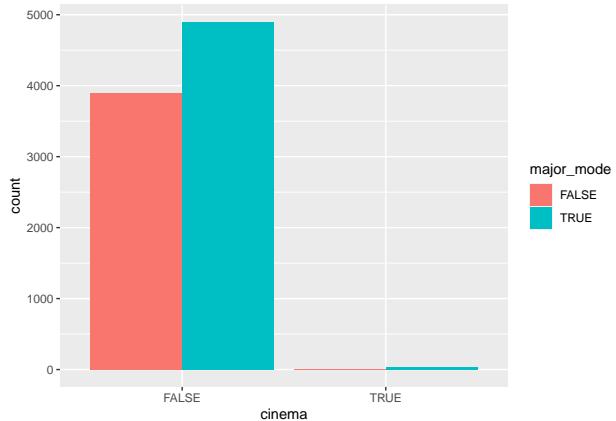


```
[1] "Chi-square test for cinema and key"
```

Pearson's Chi-squared test

```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 12, p-value = NA
```

```
[1] "cinema and major_mode"
```



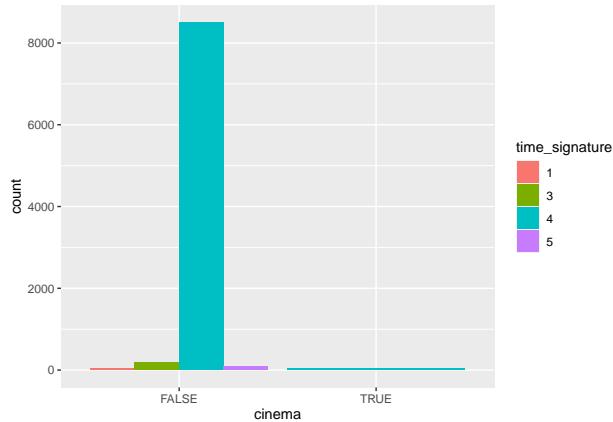
	FALSE	TRUE
FALSE	3902	4895
TRUE	6	32

```
[1] "Chi-square test for cinema and major_mode"
```

Pearson's Chi-squared test

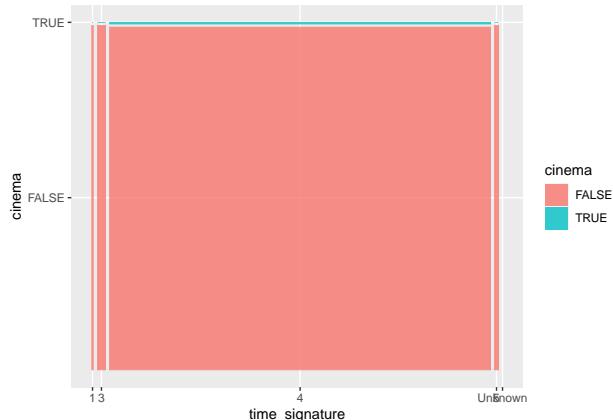
```
data: table(cat_var1, cat_var2)
X-squared = 12.517, df = 1, p-value = 0.0004032
```

```
[1] "cinema and time_signature"
```



	1	3	4	5	Unknown
FALSE	30	185	8497	85	0
TRUE	0	0	38	0	0

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

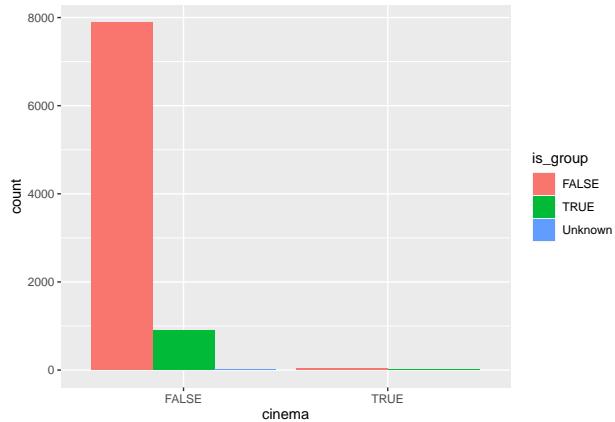


```
[1] "Chi-square test for cinema and time_signature"
```

Pearson's Chi-squared test

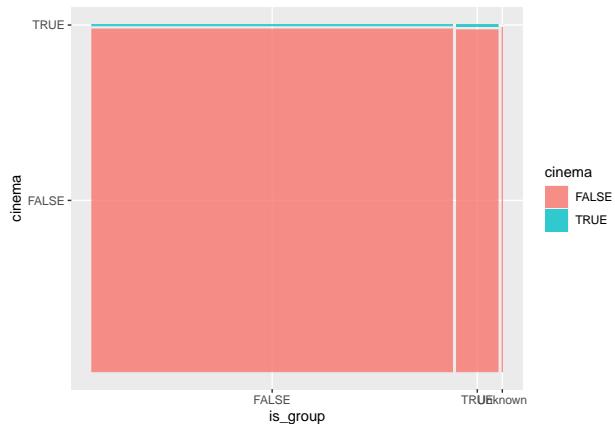
```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 4, p-value = NA
```

```
[1] "cinema and is_group"
```



```
    FALSE  TRUE Unknown
FALSE  7884  904     9
TRUE      32     6     0
```

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

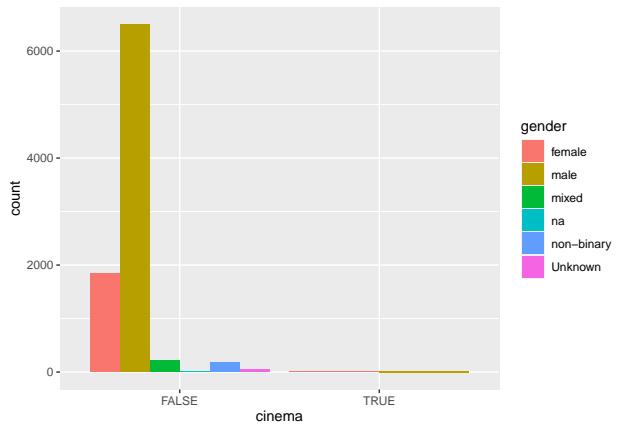


```
[1] "Chi-square test for cinema and is_group"
```

Pearson's Chi-squared test

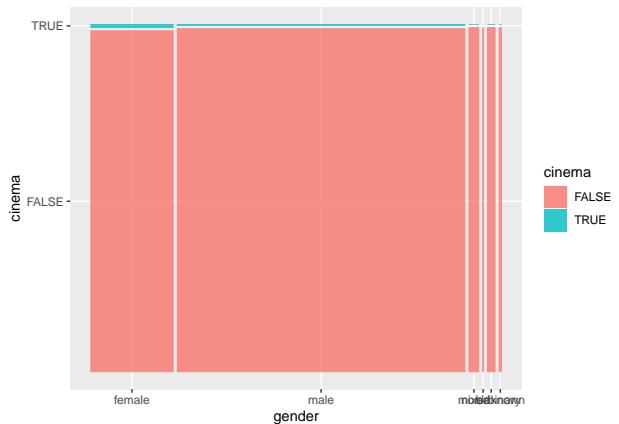
```
data: table(cat_var1, cat_var2)
X-squared = 1.2791, df = 2, p-value = 0.5275
```

```
[1] "cinema and gender"
```



	female	male	mixed	na	non-binary	Unknown
FALSE	1846	6493	222	8	174	54
TRUE	17	21	0	0	0	0

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

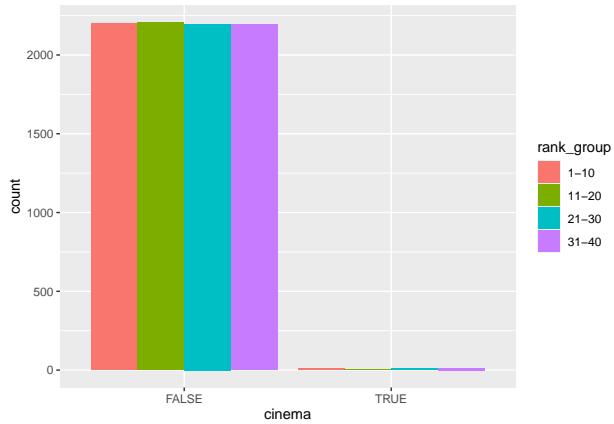


[1] "Chi-square test for cinema and gender"

Pearson's Chi-squared test

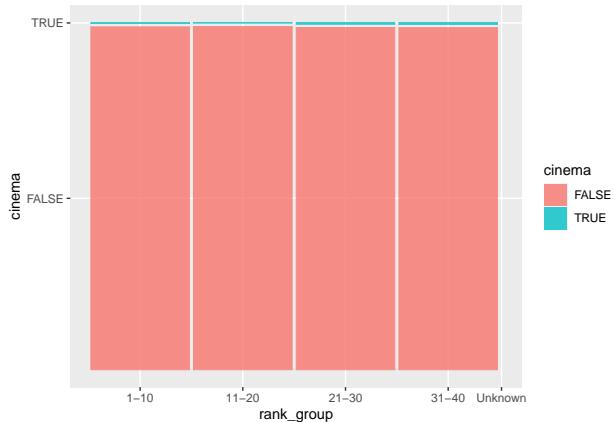
```
data: table(cat_var1, cat_var2)
X-squared = 13.867, df = 5, p-value = 0.01648
```

[1] "cinema and rank\_group"



```
1-10 11-20 21-30 31-40 Unknown
FALSE 2200 2205 2197 2195 0
TRUE     8      5     12     13  0
```

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

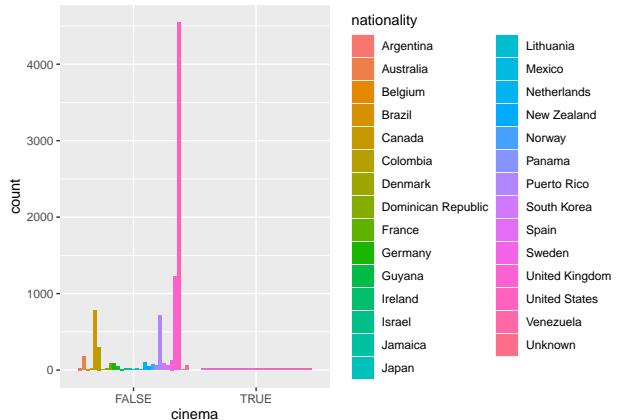


```
[1] "Chi-square test for cinema and rank_group"
```

Pearson's Chi-squared test

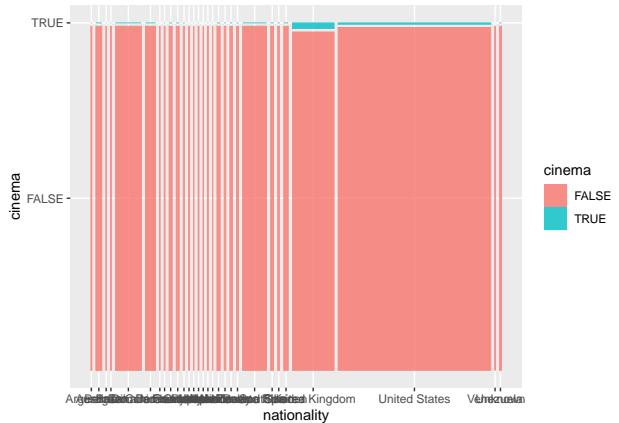
```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 4, p-value = NA
```

```
[1] "cinema and nationality"
```



	Argentina	Australia	Belgium	Brazil	Canada	Colombia	Denmark	
FALSE	27	177	15	23	775	301	13	
TRUE	0	0	0	0	0	0	0	
	Dominican Republic	France	Germany	Guyana	Ireland	Israel	Jamaica	Japan
FALSE	26	90	86	43	14	19	26	9
TRUE	0	0	0	0	0	0	0	0
	Lithuania	Mexico	Netherlands	New Zealand	Norway	Panama	Puerto Rico	
FALSE	25	13	94	47	73	62	715	
TRUE	0	0	0	0	0	0	0	
	South Korea	Spain	Sweden	United Kingdom	United States	Venezuela	Unknown	
FALSE	89	58	131	1226	4543	13	64	
TRUE	0	0	0	21	17	0	0	

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

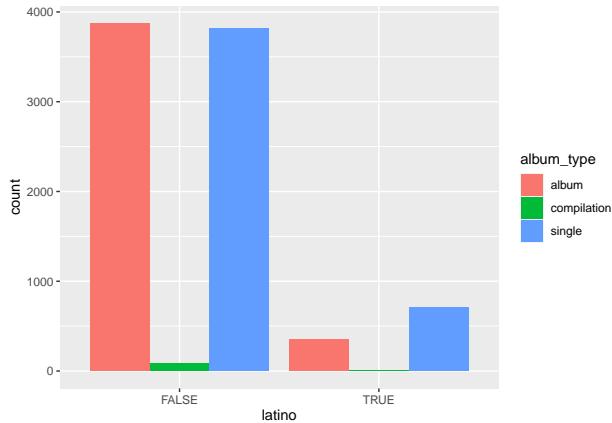


[1] "Chi-square test for cinema and nationality"

Pearson's Chi-squared test

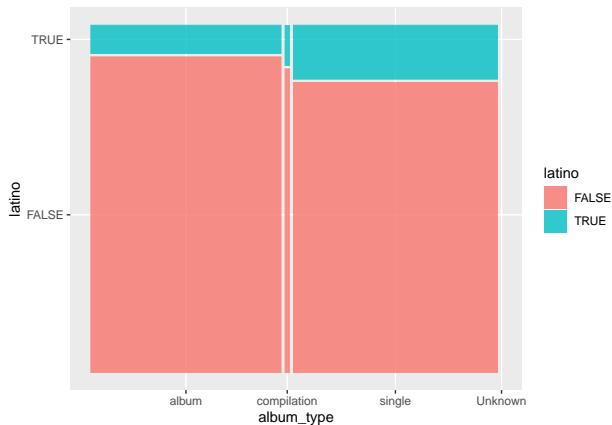
```
data: table(cat_var1, cat_var2)
X-squared = 59.213, df = 28, p-value = 0.0005128
```

```
[1] "latino and album_type"
```



	album	compilation	single	Unknown
FALSE	3870	83	3816	0
TRUE	347	11	708	0

```
Warning in chisq.test(table(cat_var1, cat_var2), correct = FALSE): Chi-squared approximation may be incorrect
```

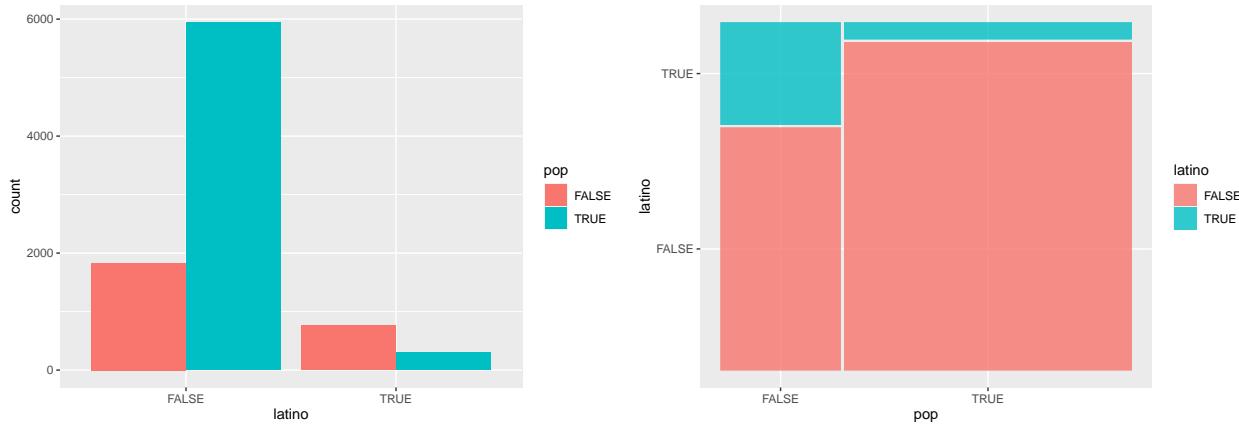


```
[1] "Chi-square test for latino and album_type"
```

Pearson's Chi-squared test

```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 3, p-value = NA
```

```
[1] "latino and pop"
```



```

      FALSE  TRUE
FALSE   1830  5939
TRUE     769   297
[1] "Chi-square test for latino and pop"

```

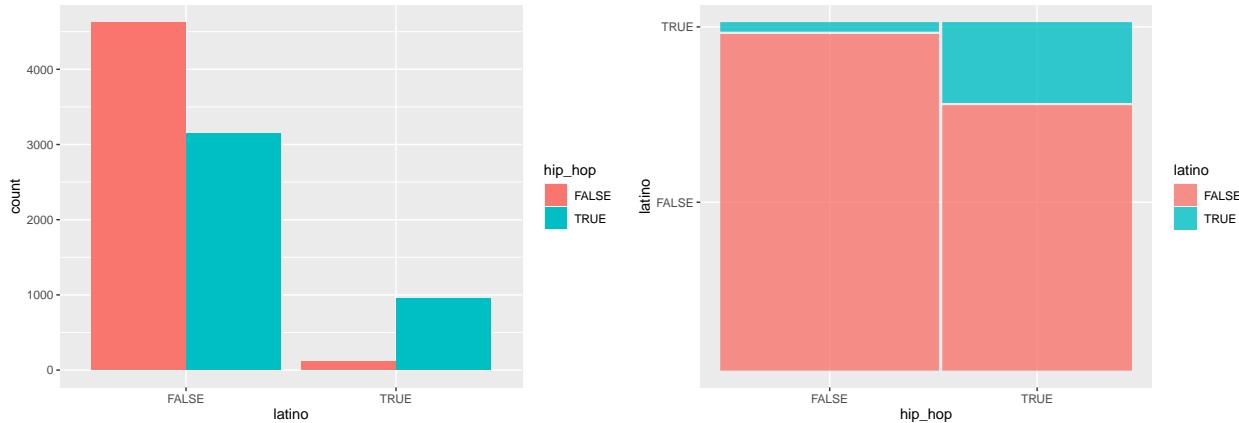
Pearson's Chi-squared test

```

data: table(cat_var1, cat_var2)
X-squared = 1065.6, df = 1, p-value < 2.2e-16

```

[1] "latino and hip\_hop"



```

      FALSE  TRUE
FALSE   4620  3149
TRUE     116   950
[1] "Chi-square test for latino and hip_hop"

```

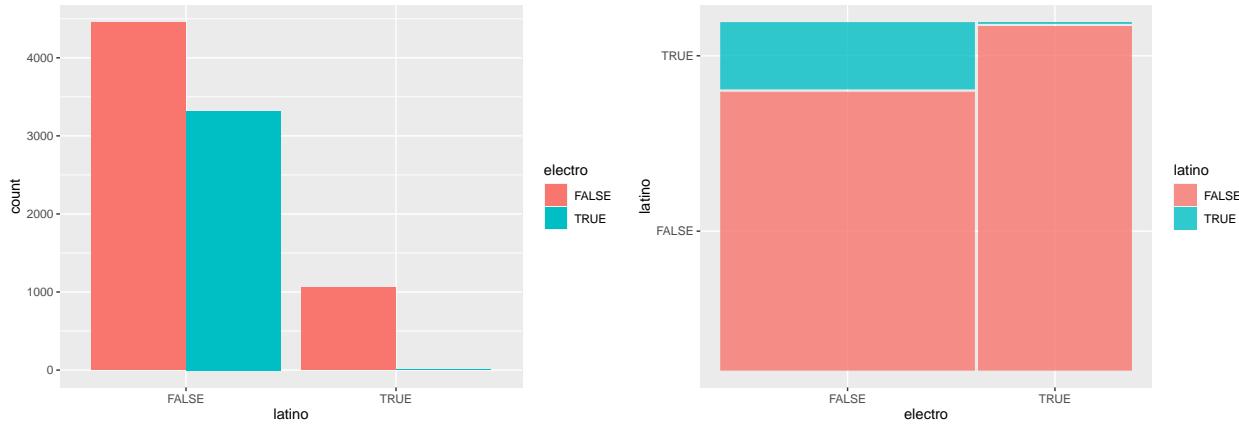
Pearson's Chi-squared test

```

data: table(cat_var1, cat_var2)
X-squared = 889.71, df = 1, p-value < 2.2e-16

```

[1] "latino and electro"



```

      FALSE  TRUE
FALSE   4450 3319
TRUE    1061   5
[1] "Chi-square test for latino and electro"

```

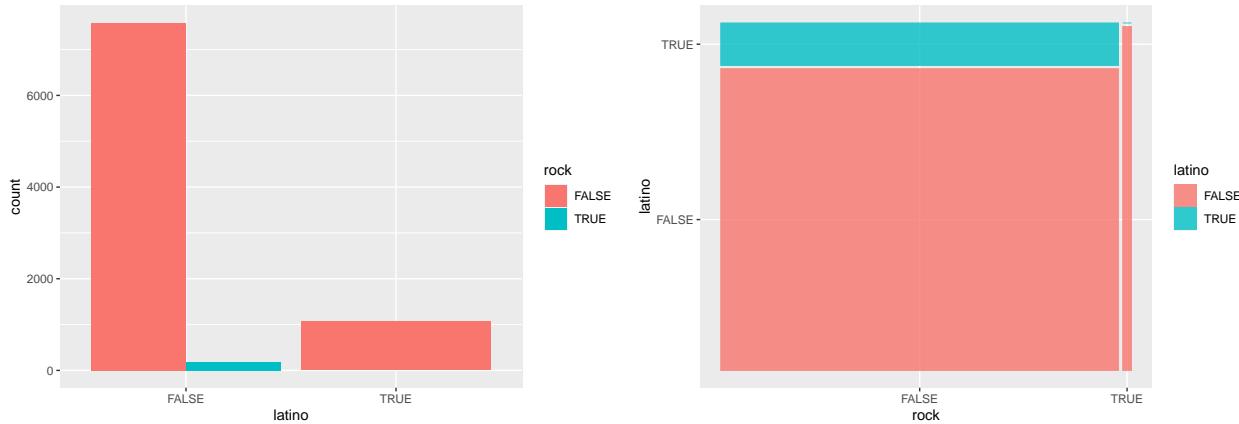
Pearson's Chi-squared test

```

data: table(cat_var1, cat_var2)
X-squared = 713.07, df = 1, p-value < 2.2e-16

```

[1] "latino and rock"



```

      FALSE  TRUE
FALSE   7580  189
TRUE    1066   0
[1] "Chi-square test for latino and rock"

```

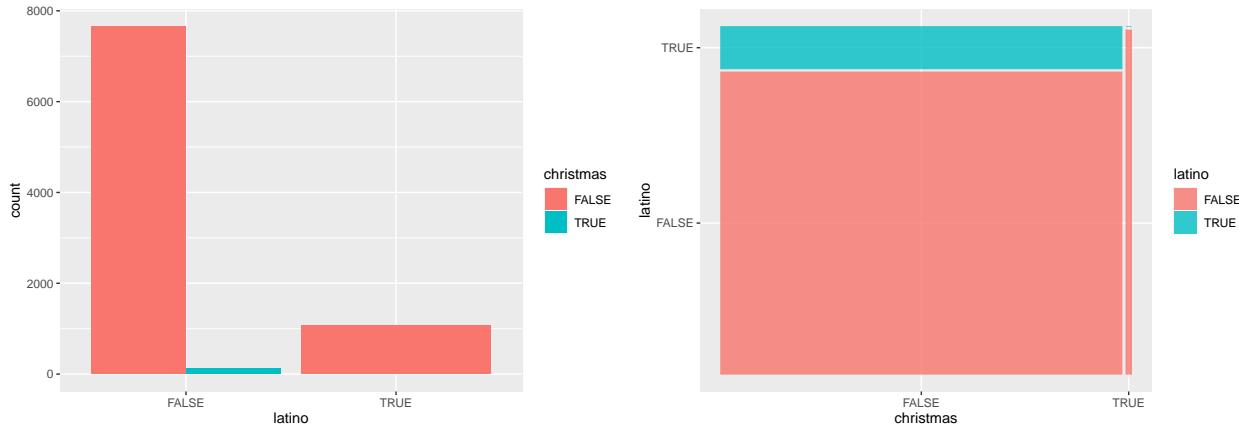
Pearson's Chi-squared test

```

data: table(cat_var1, cat_var2)
X-squared = 26.5, df = 1, p-value = 2.635e-07

```

[1] "latino and christmas"



```

      FALSE  TRUE
FALSE  7651   118
TRUE    1066    0
[1] "Chi-square test for latino and christmas"

```

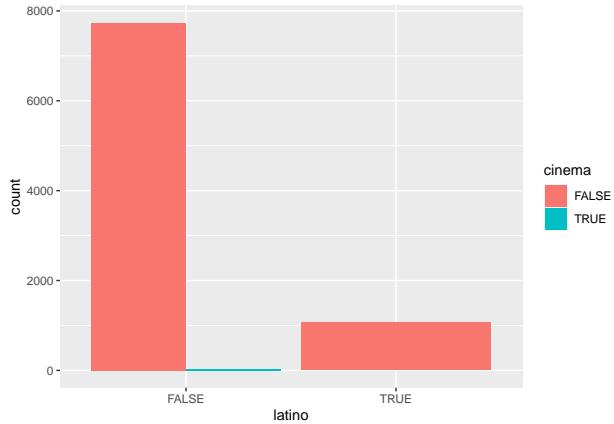
Pearson's Chi-squared test

```

data: table(cat_var1, cat_var2)
X-squared = 16.41, df = 1, p-value = 5.101e-05

```

[1] "latino and cinema"

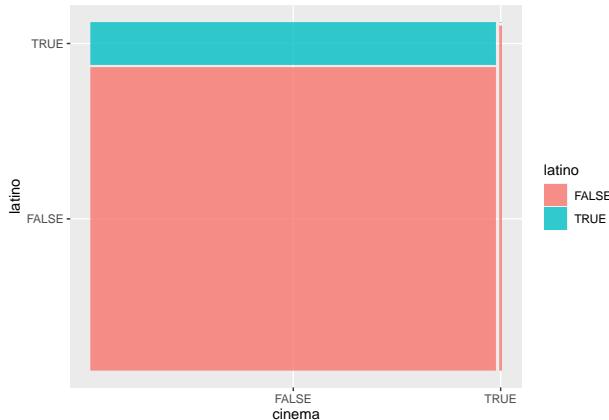


	FALSE	TRUE
FALSE	7731	38
TRUE	1066	0

```

Warning in chisq.test(table(cat_var1, cat_var2), correct = FALSE): Chi-squared
approximation may be incorrect

```

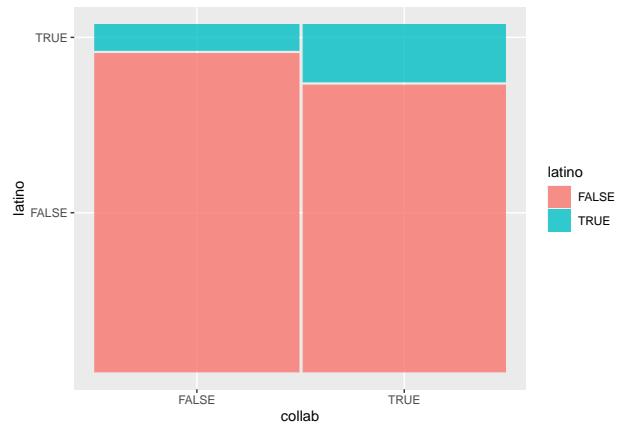
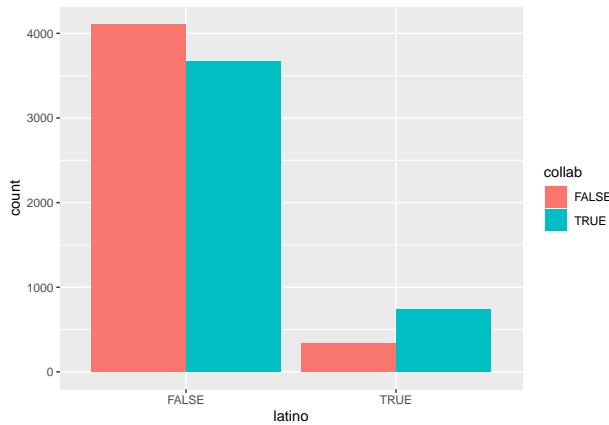


```
[1] "Chi-square test for latino and cinema"
```

Pearson's Chi-squared test

```
data: table(cat_var1, cat_var2)
X-squared = 5.2366, df = 1, p-value = 0.02212
```

```
[1] "latino and collab"
```

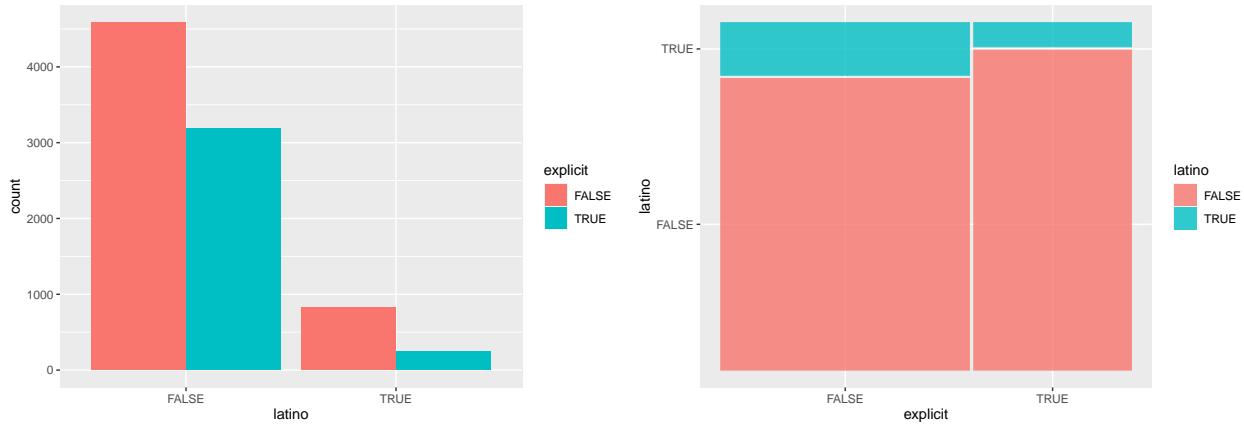


```
      FALSE  TRUE
FALSE  4105 3664
TRUE    333  733
[1] "Chi-square test for latino and collab"
```

Pearson's Chi-squared test

```
data: table(cat_var1, cat_var2)
X-squared = 174.94, df = 1, p-value < 2.2e-16
```

```
[1] "latino and explicit"
```



```

      FALSE  TRUE
FALSE  4583 3186
TRUE   826  240
[1] "Chi-square test for latino and explicit"

```

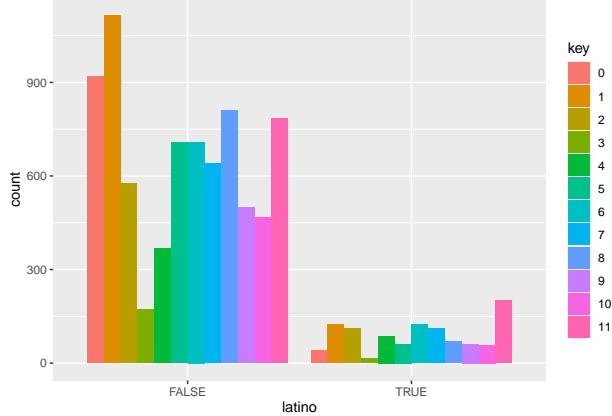
Pearson's Chi-squared test

```

data: table(cat_var1, cat_var2)
X-squared = 135.06, df = 1, p-value < 2.2e-16

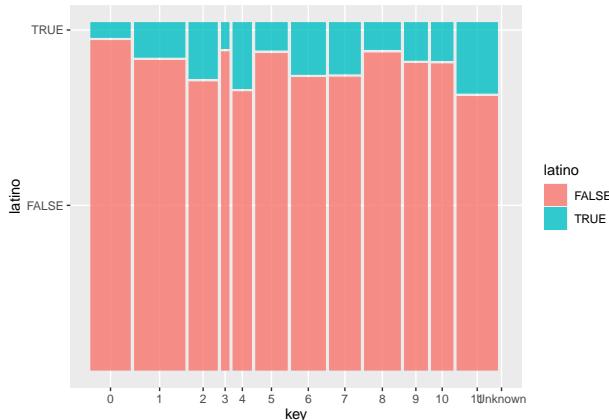
```

[1] "latino and key"



	0	1	2	3	4	5	6	7	8	9	10	11	Unknown
FALSE	920	1114	577	172	368	707	709	641	809	499	468	785	0
TRUE	41	124	112	14	87	61	125	112	69	61	58	202	0

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

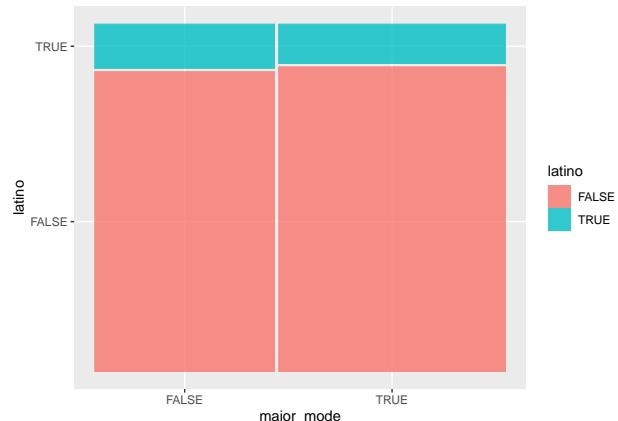
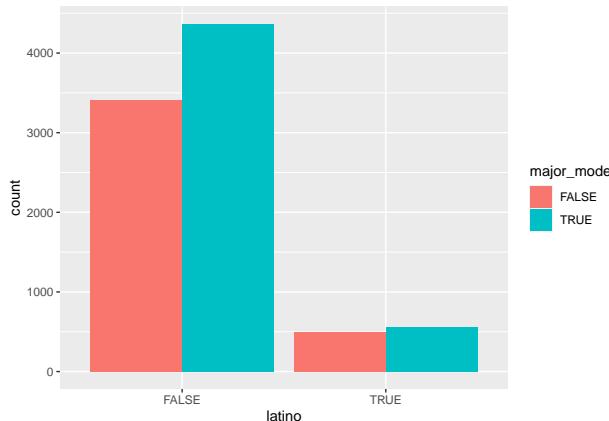


[1] "Chi-square test for latino and key"

Pearson's Chi-squared test

```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 12, p-value = NA
```

[1] "latino and major\_mode"



  FALSE TRUE

  FALSE 3406 4363

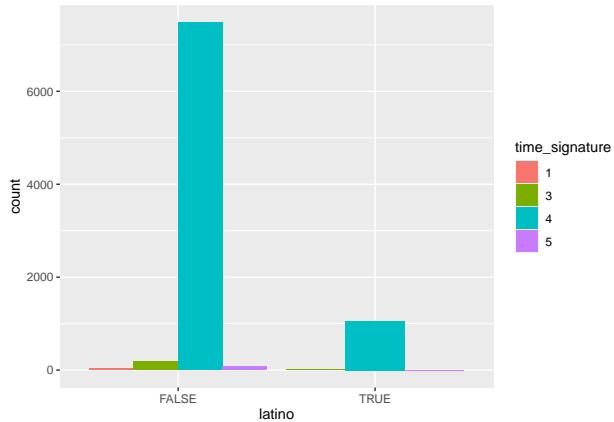
  TRUE 502 564

[1] "Chi-square test for latino and major\_mode"

Pearson's Chi-squared test

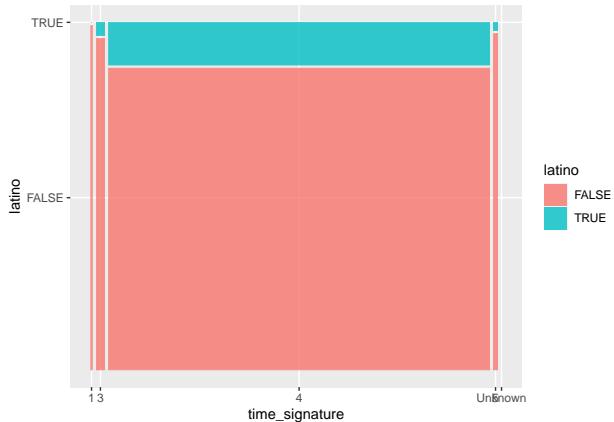
```
data: table(cat_var1, cat_var2)
X-squared = 4.0164, df = 1, p-value = 0.04506
```

[1] "latino and time\_signature"



	1	3	4	5	Unknown
FALSE	30	178	7478	83	0
TRUE	0	7	1057	2	0

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

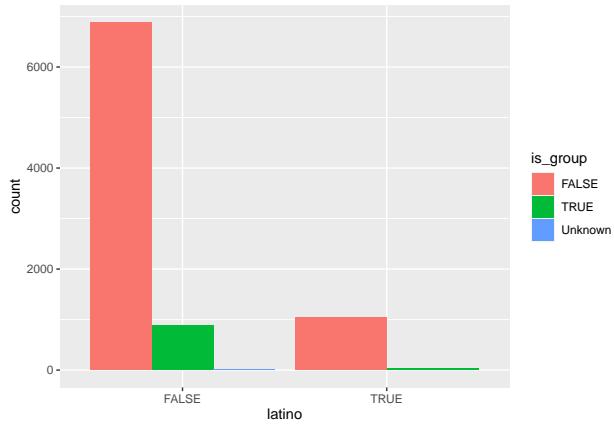


[1] "Chi-square test for latino and time\_signature"

Pearson's Chi-squared test

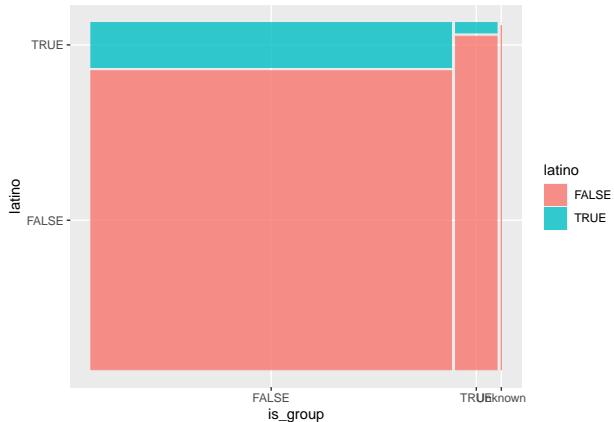
```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 4, p-value = NA
```

[1] "latino and is\_group"



	FALSE	TRUE	Unknown
FALSE	6878	882	9
TRUE	1038	28	0

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

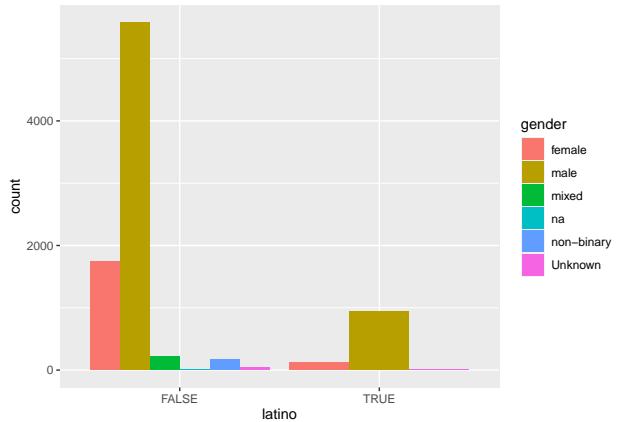


```
[1] "Chi-square test for latino and is_group"
```

Pearson's Chi-squared test

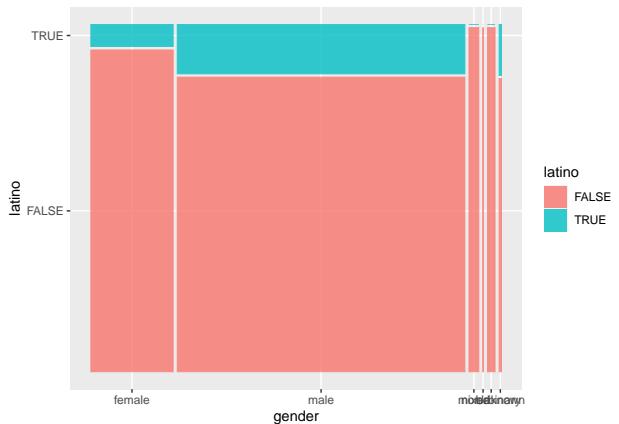
```
data: table(cat_var1, cat_var2)
X-squared = 78.713, df = 2, p-value < 2.2e-16
```

```
[1] "latino and gender"
```



	female	male	mixed	na	non-binary	Unknown
FALSE	1742	5577	222	8	174	46
TRUE	121	937	0	0	0	8

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

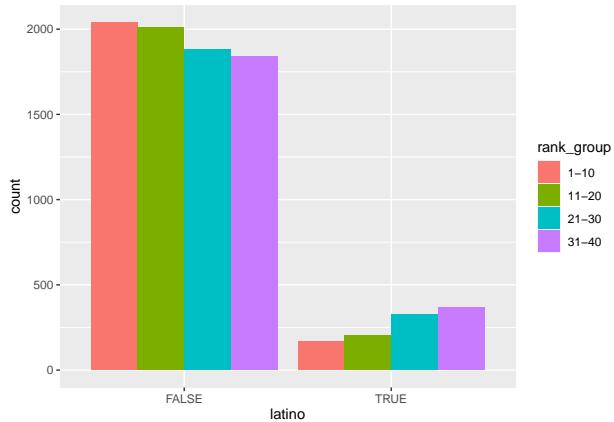


[1] "Chi-square test for latino and gender"

Pearson's Chi-squared test

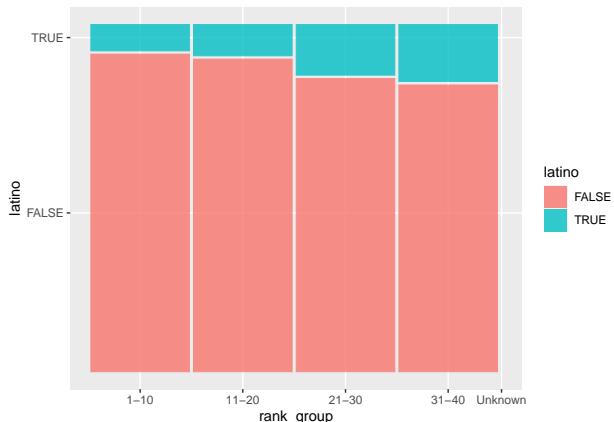
```
data: table(cat_var1, cat_var2)
X-squared = 143.32, df = 5, p-value < 2.2e-16
```

[1] "latino and rank\_group"



	1-10	11-20	21-30	31-40	Unknown
FALSE	2038	2008	1883	1840	0
TRUE	170	202	326	368	0

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

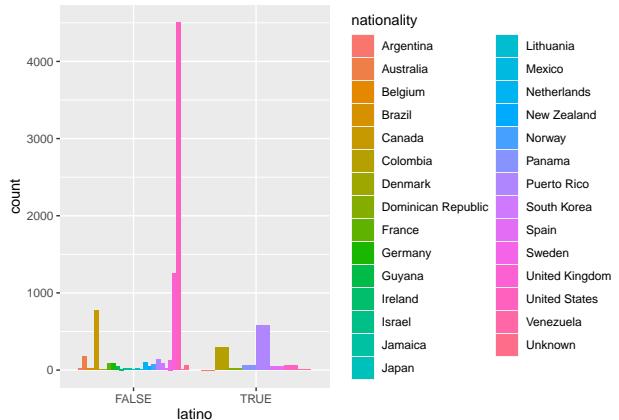


[1] "Chi-square test for latino and rank\_group"

Pearson's Chi-squared test

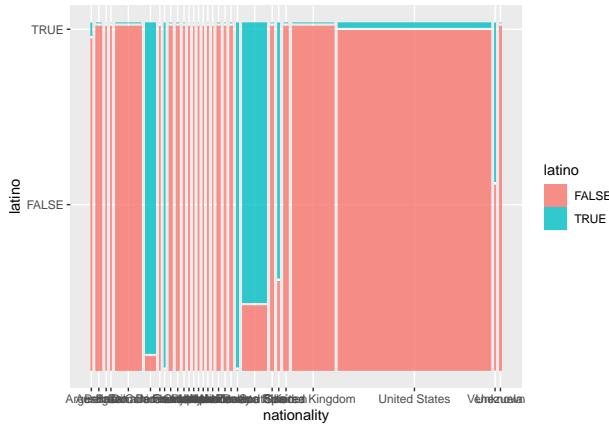
```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 4, p-value = NA
```

[1] "latino and nationality"



	Argentina	Australia	Belgium	Brazil	Canada	Colombia	Denmark	Dominican Republic	France	Germany	Guyana	Ireland	Israel	Jamaica	Japan	Lithuania	Mexico	Netherlands	New Zealand	Norway	Panama	Puerto Rico	South Korea	Spain	Sweden	United Kingdom	United States	Venezuela	Unknown	
FALSE	26	177	15	23	775	12	13																							
TRUE	1	0	0	0	0	289	0																							
	Dominican Republic	France	Germany	Guyana	Ireland	Israel	Jamaica	Japan																						
FALSE		0	90	86	43	14	19	26	9																					
TRUE	26	0	0	0	0	0	0	0	0																					
	Lithuania	Mexico	Netherlands	New Zealand	Norway	Panama	Puerto Rico																							
FALSE	25	13		94	47	73	0	134																						
TRUE	0	0		0	0	0	62	581																						
	South Korea	Spain	Sweden	United Kingdom	United States	Venezuela	Unknown																							
FALSE	89	15	131		1247	4502	7	64																						
TRUE	0	43	0		0	58	6	0																						

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

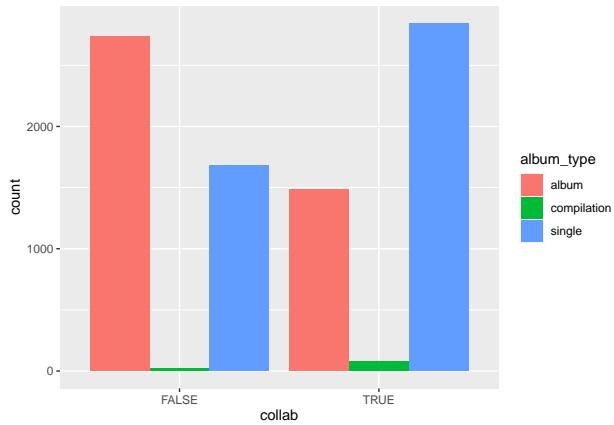


```
[1] "Chi-square test for latino and nationality"
```

Pearson's Chi-squared test

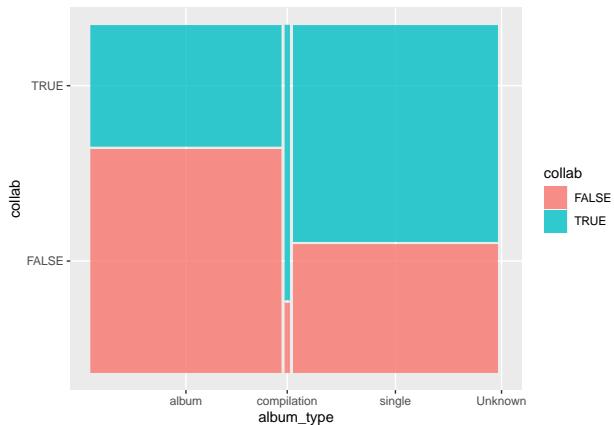
```
data: table(cat_var1, cat_var2)
X-squared = 7016.1, df = 28, p-value < 2.2e-16
```

```
[1] "collab and album_type"
```



	album	compilation	single	Unknown
FALSE	2736	19	1683	0
TRUE	1481	75	2841	0

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

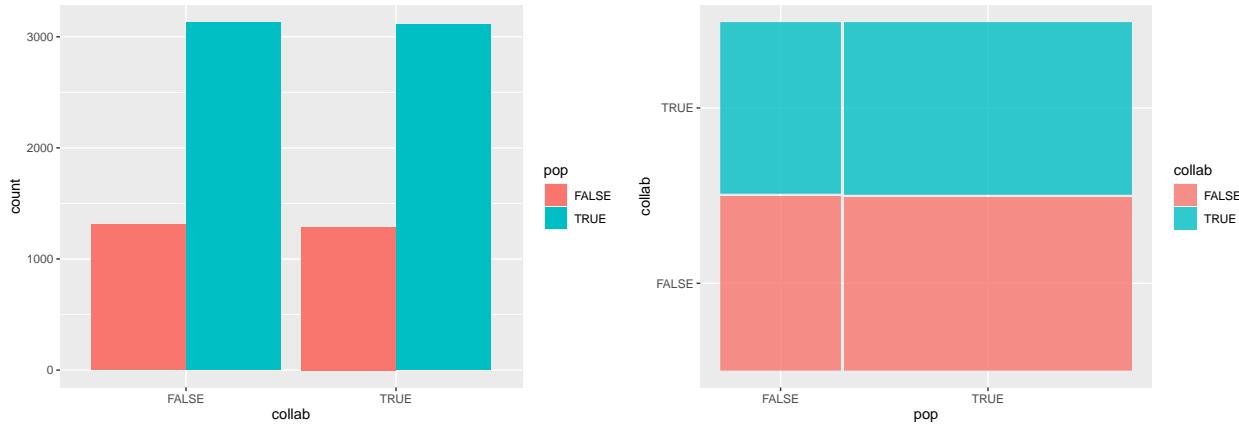


```
[1] "Chi-square test for collab and album_type"
```

Pearson's Chi-squared test

```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 3, p-value = NA
```

```
[1] "collab and pop"
```



```

      FALSE  TRUE
FALSE   1311  3127
TRUE    1288  3109
[1] "Chi-square test for collab and pop"

```

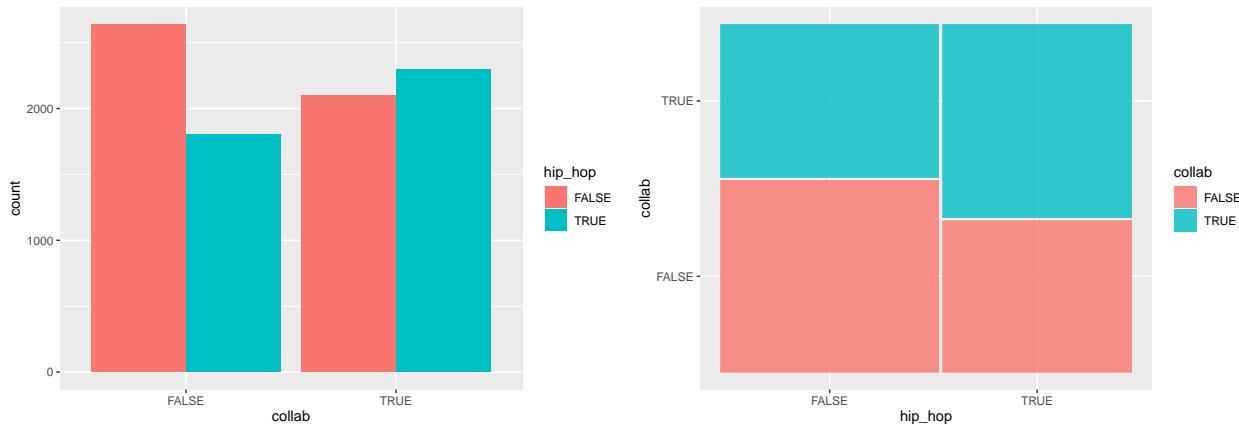
Pearson's Chi-squared test

```

data: table(cat_var1, cat_var2)
X-squared = 0.065232, df = 1, p-value = 0.7984

```

```
[1] "collab and hip_hop"
```



```

      FALSE  TRUE
FALSE   2636  1802
TRUE    2100  2297
[1] "Chi-square test for collab and hip_hop"

```

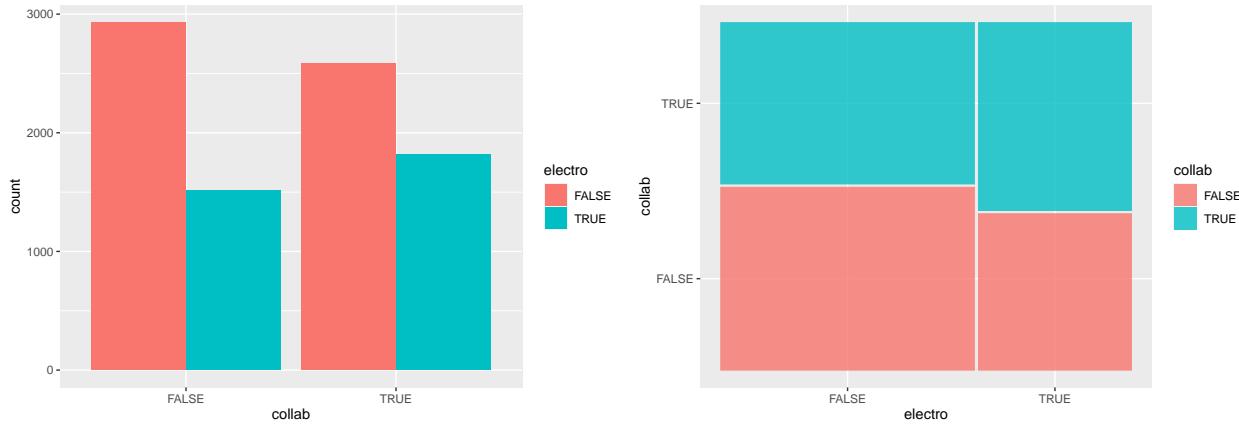
Pearson's Chi-squared test

```

data: table(cat_var1, cat_var2)
X-squared = 120.25, df = 1, p-value < 2.2e-16

```

```
[1] "collab and electro"
```



```

      FALSE  TRUE
FALSE   2928 1510
TRUE    2583 1814
[1] "Chi-square test for collab and electro"

```

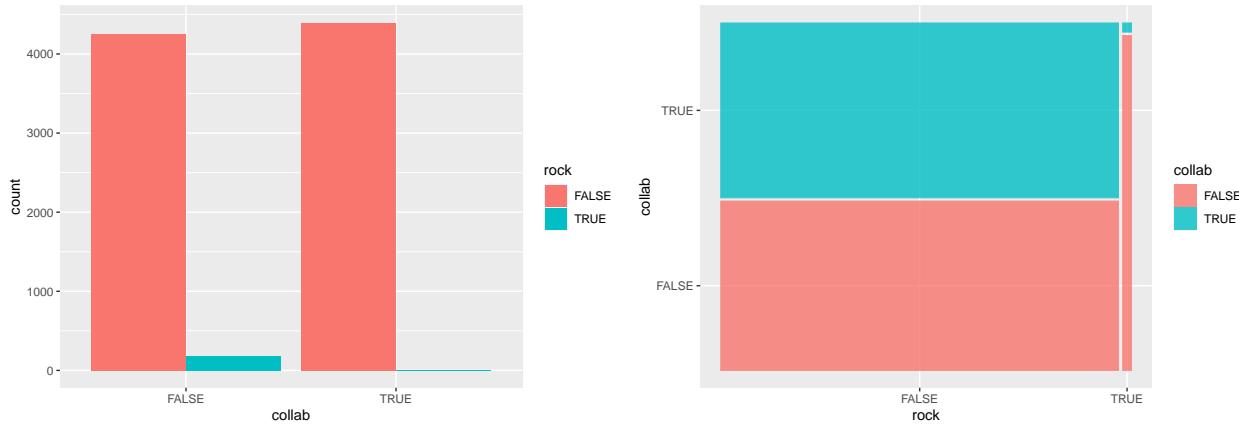
Pearson's Chi-squared test

```

data: table(cat_var1, cat_var2)
X-squared = 49.211, df = 1, p-value = 2.298e-12

```

[1] "collab and rock"



```

      FALSE  TRUE
FALSE   4254  184
TRUE    4392    5
[1] "Chi-square test for collab and rock"

```

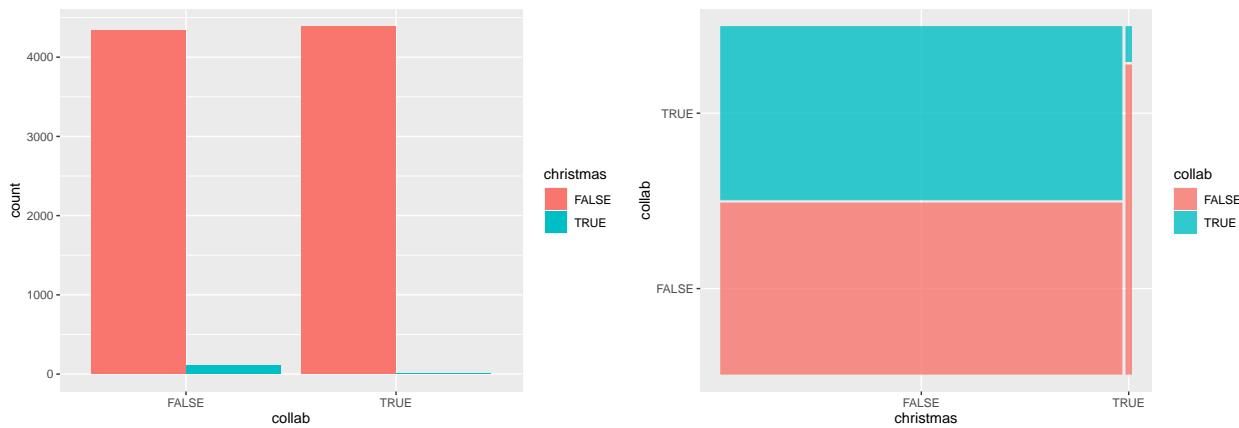
Pearson's Chi-squared test

```

data: table(cat_var1, cat_var2)
X-squared = 171.55, df = 1, p-value < 2.2e-16

```

[1] "collab and christmas"



```

      FALSE  TRUE
FALSE  4332  106
TRUE   4385   12
[1] "Chi-square test for collab and christmas"

```

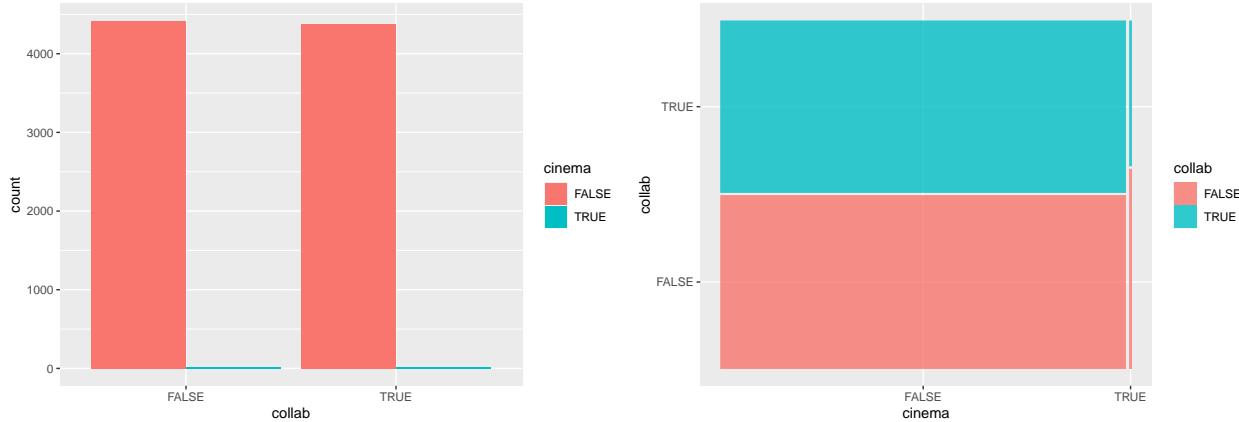
Pearson's Chi-squared test

```

data: table(cat_var1, cat_var2)
X-squared = 75.015, df = 1, p-value < 2.2e-16

```

[1] "collab and cinema"



```

      FALSE  TRUE
FALSE  4416   22
TRUE   4381   16
[1] "Chi-square test for collab and cinema"

```

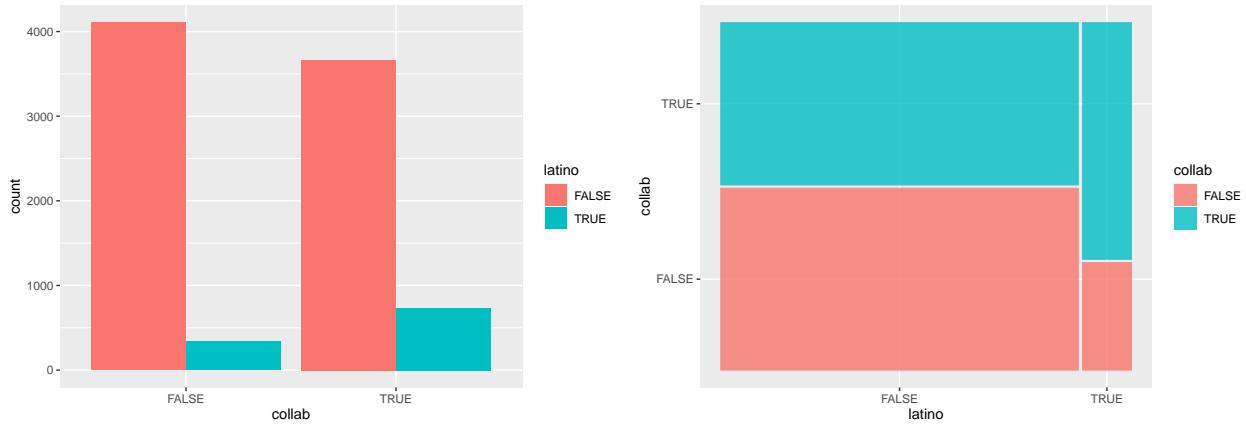
Pearson's Chi-squared test

```

data: table(cat_var1, cat_var2)
X-squared = 0.89637, df = 1, p-value = 0.3438

```

[1] "collab and latino"



```

      FALSE  TRUE
FALSE  4105  333
TRUE   3664  733
[1] "Chi-square test for collab and latino"

```

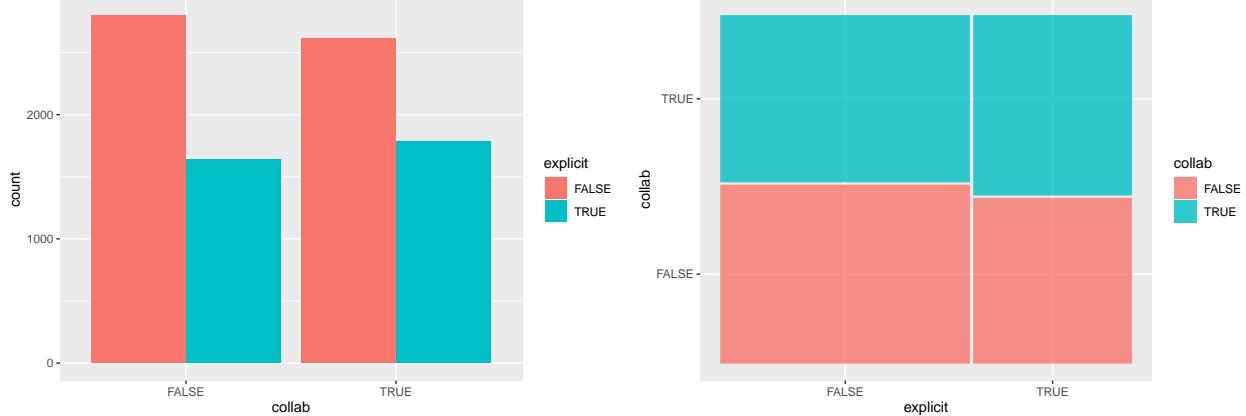
```

Pearson's Chi-squared test

data: table(cat_var1, cat_var2)
X-squared = 174.94, df = 1, p-value < 2.2e-16

```

```
[1] "collab and explicit"
```



```

      FALSE  TRUE
FALSE  2797  1641
TRUE   2612  1785
[1] "Chi-square test for collab and explicit"

```

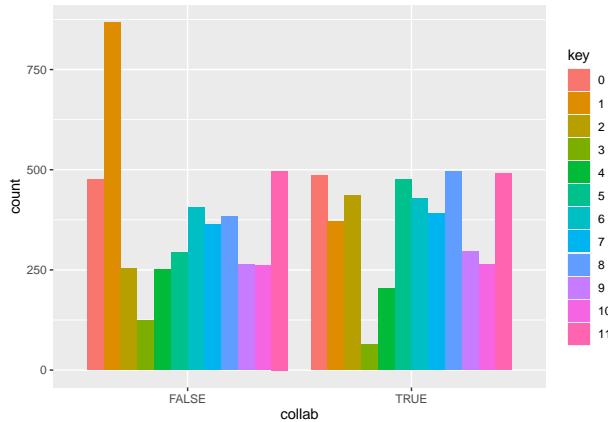
```

Pearson's Chi-squared test

data: table(cat_var1, cat_var2)
X-squared = 12.19, df = 1, p-value = 0.0004805

```

```
[1] "collab and key"
```

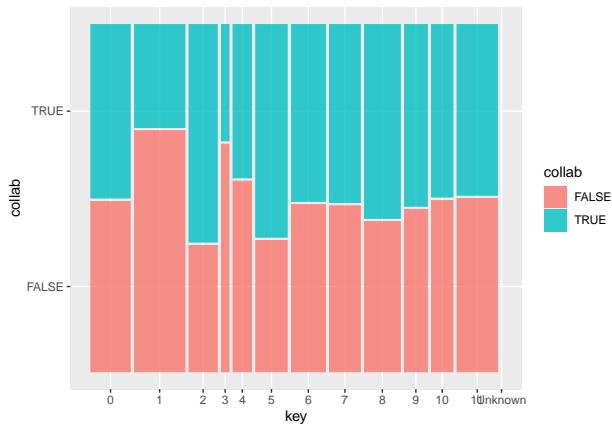


```

0   1   2   3   4   5   6   7   8   9   10  11 Unknown
FALSE 476 867 253 123 252 293 405 363 383 264 262 497      0
TRUE   485 371 436  63 203 475 429 390 495 296 264 490      0

```

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

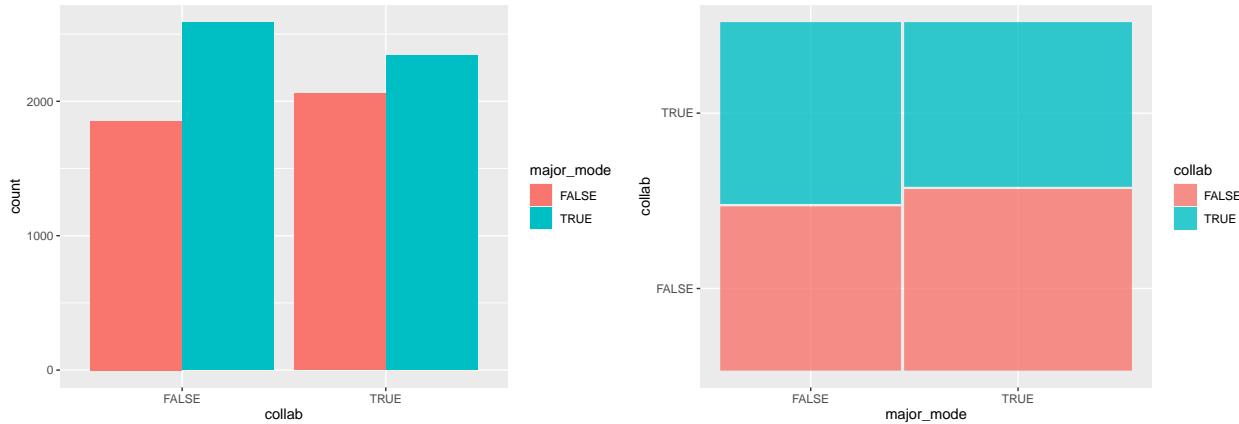


```
[1] "Chi-square test for collab and key"
```

```
Pearson's Chi-squared test
```

```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 12, p-value = NA
```

```
[1] "collab and major_mode"
```



```

      FALSE  TRUE
FALSE   1853 2585
TRUE    2055 2342
[1] "Chi-square test for collab and major_mode"

```

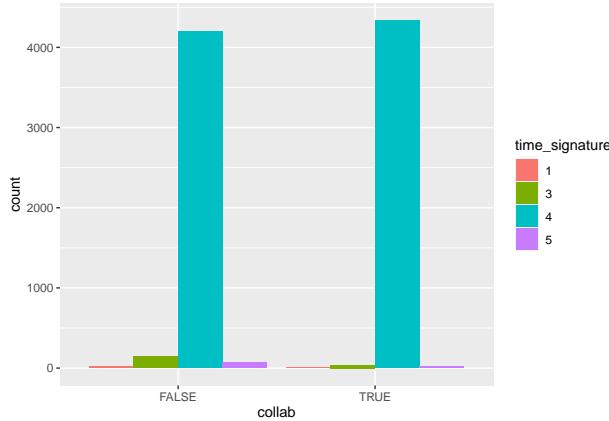
Pearson's Chi-squared test

```

data: table(cat_var1, cat_var2)
X-squared = 22.236, df = 1, p-value = 2.411e-06

```

[1] "collab and time\_signature"

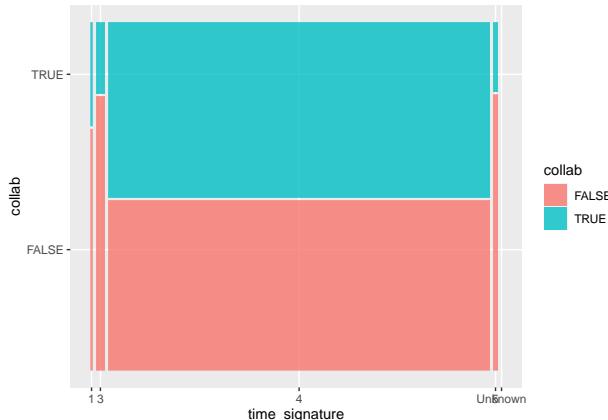


	1	3	4	5	Unknown
FALSE	21	147	4202	68	0
TRUE	9	38	4333	17	0

```

Warning in chisq.test(table(cat_var1, cat_var2), correct = FALSE): Chi-squared approximation may be incorrect

```

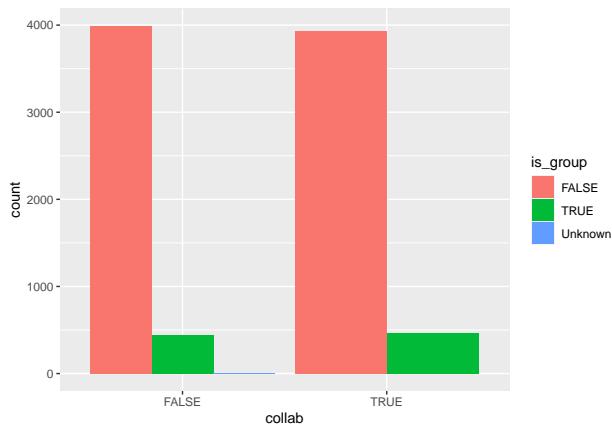


```
[1] "Chi-square test for collab and time_signature"
```

Pearson's Chi-squared test

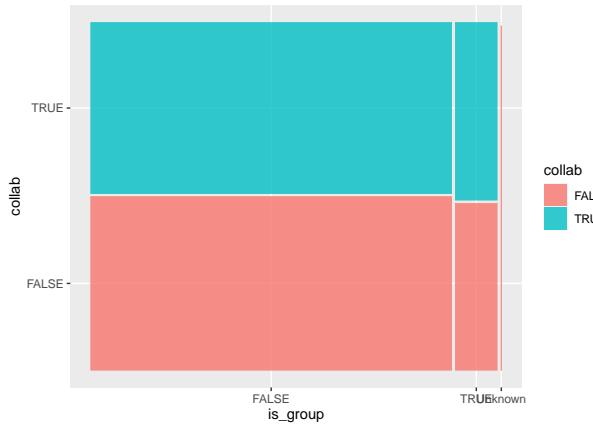
```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 4, p-value = NA
```

```
[1] "collab and is_group"
```



	FALSE	TRUE	Unknown
FALSE	3988	441	9
TRUE	3928	469	0

```
Warning in chisq.test(table(cat_var1, cat_var2), correct = FALSE): Chi-squared approximation may be incorrect
```

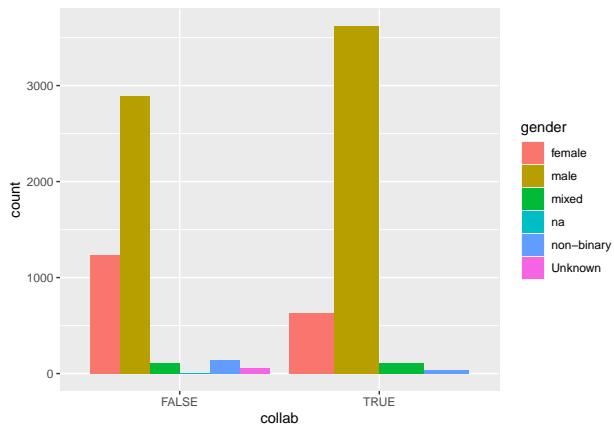


```
[1] "Chi-square test for collab and is_group"
```

Pearson's Chi-squared test

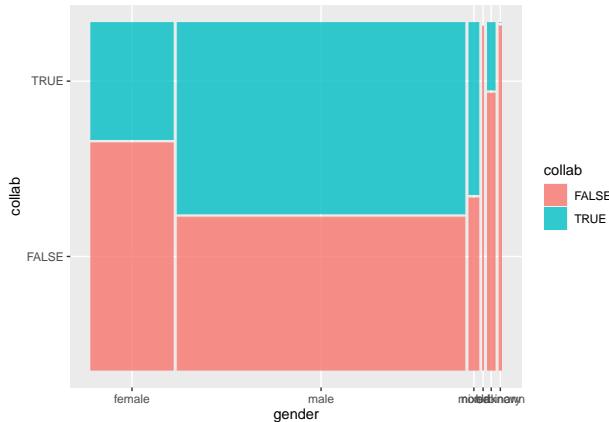
```
data: table(cat_var1, cat_var2)
X-squared = 10.126, df = 2, p-value = 0.006326
```

```
[1] "collab and gender"
```



	female	male	mixed	na	non-binary	Unknown
FALSE	1230	2895	111	8	140	54
TRUE	633	3619	111	0	34	0

```
Warning in chisq.test(table(cat_var1, cat_var2), correct = FALSE): Chi-squared approximation may be incorrect
```

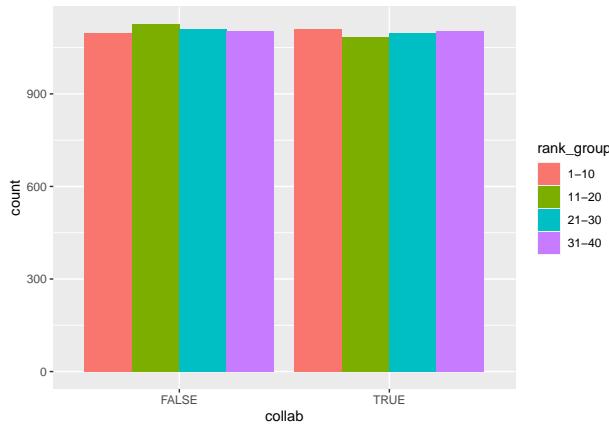


```
[1] "Chi-square test for collab and gender"
```

Pearson's Chi-squared test

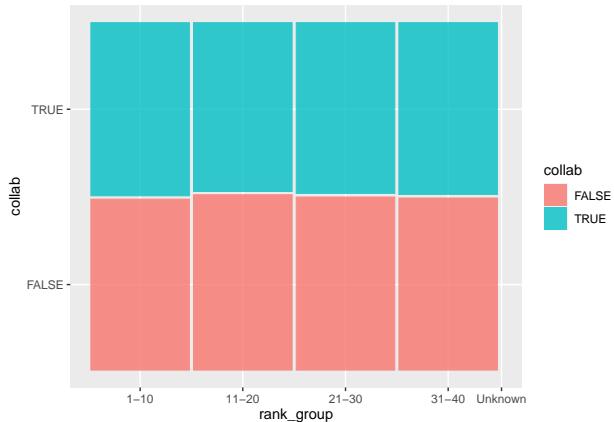
```
data: table(cat_var1, cat_var2)
X-squared = 398.17, df = 5, p-value < 2.2e-16
```

```
[1] "collab and rank_group"
```



	1-10	11-20	21-30	31-40	Unknown
FALSE	1097	1126	1111	1104	0
TRUE	1111	1084	1098	1104	0

```
Warning in chisq.test(table(cat_var1, cat_var2), correct = FALSE): Chi-squared approximation may be incorrect
```

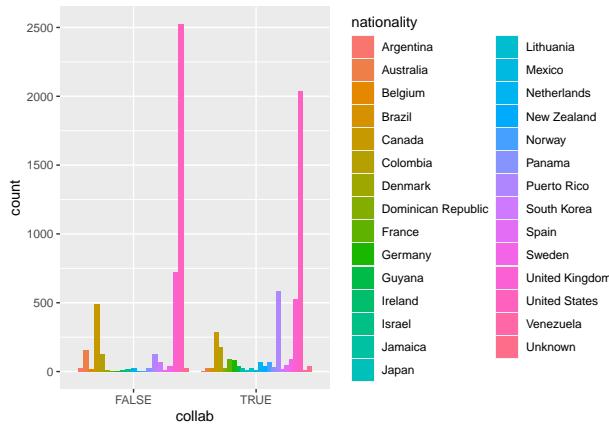


```
[1] "Chi-square test for collab and rank_group"
```

## Pearson's Chi-squared test

```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 4, p-value = NA
```

```
[1] "collab and nationality"
```



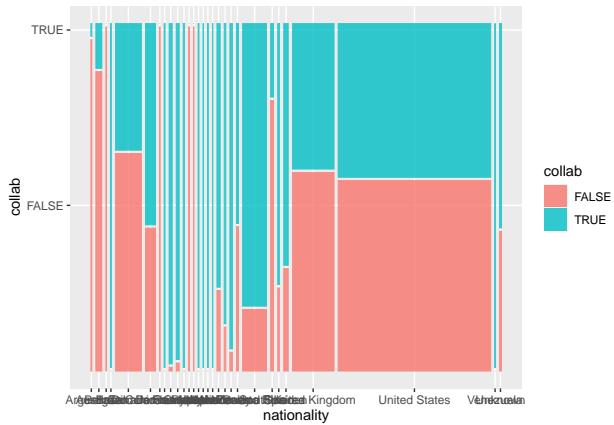
	Argentina	Australia	Belgium	Brazil	Canada	Colombia	Denmark
FALSE	26	154	15	0	490	125	13
TRUE	1	23	0	23	285	176	0

	Dominican Republic	France	Germany	Guyana	Ireland	Israel	Jamaica	Japan
FALSE	0	1	2	0	14	19	0	0
TRUE	26	89	84	43	0	0	26	9

	Lithuania	Mexico	Netherlands	New Zealand	Norway	Panama	Puerto Rico
FALSE	0	0	22	6	4	26	128
TRUE	25	13	72	41	69	36	587

	South	Korea	Spain	Sweden	United Kingdom	United States	Venezuela	Unknown
FALSE	70	14	39		720	2524	0	26
TRUE	19	44	92		527	2036	13	38

```
Warning in chisq.test(table(cat_var1, cat_var2), correct = FALSE): Chi-squared approximation may be incorrect
```

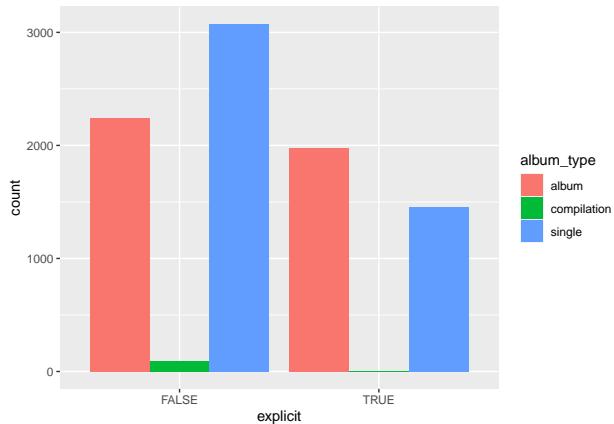


```
[1] "Chi-square test for collab and nationality"
```

```
Pearson's Chi-squared test
```

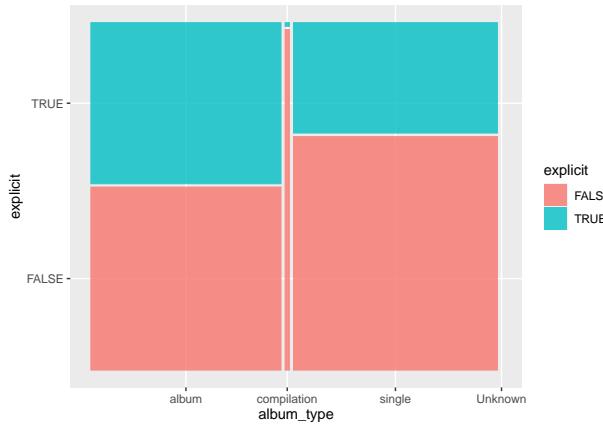
```
data: table(cat_var1, cat_var2)
X-squared = 1143.4, df = 28, p-value < 2.2e-16
```

```
[1] "explicit and album_type"
```



	album	compilation	single	Unknown
FALSE	2243	93	3073	0
TRUE	1974	1	1451	0

```
Warning in chisq.test(table(cat_var1, cat_var2), correct = FALSE): Chi-squared approximation may be incorrect
```

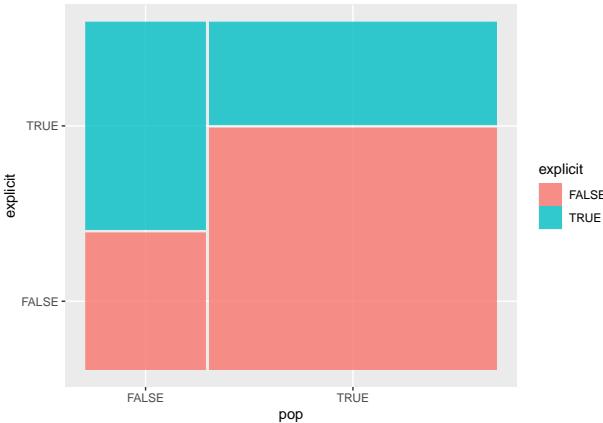
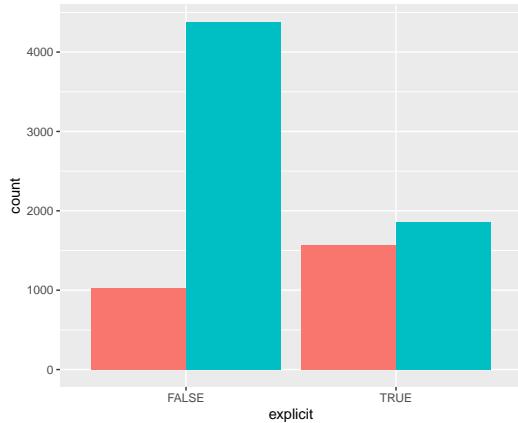


```
[1] "Chi-square test for explicit and album_type"
```

Pearson's Chi-squared test

```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 3, p-value = NA
```

```
[1] "explicit and pop"
```

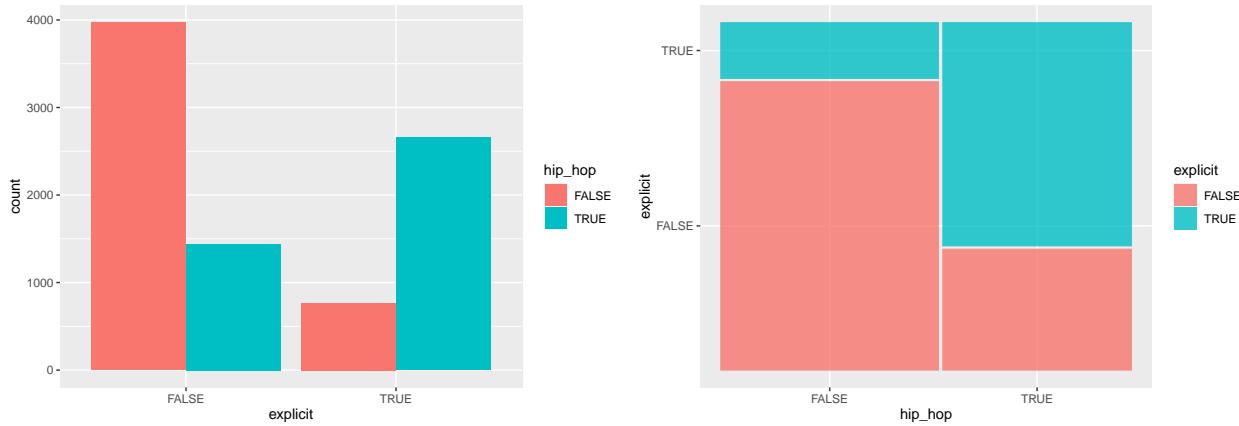


```
      FALSE TRUE
FALSE  1032 4377
TRUE   1567 1859
[1] "Chi-square test for explicit and pop"
```

Pearson's Chi-squared test

```
data: table(cat_var1, cat_var2)
X-squared = 717.95, df = 1, p-value < 2.2e-16
```

```
[1] "explicit and hip_hop"
```



```

      FALSE  TRUE
FALSE   3969 1440
TRUE     767 2659
[1] "Chi-square test for explicit and hip_hop"

```

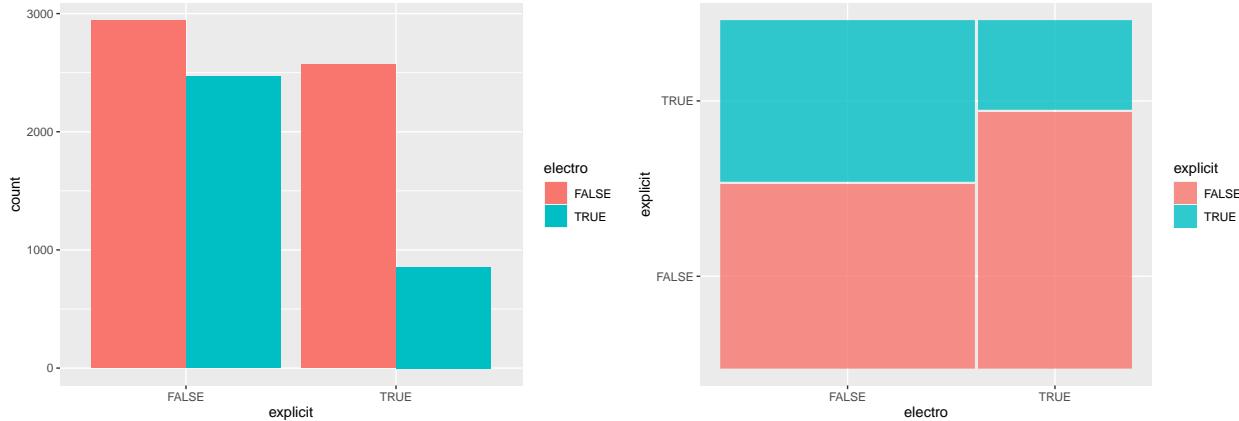
Pearson's Chi-squared test

```

data: table(cat_var1, cat_var2)
X-squared = 2192.8, df = 1, p-value < 2.2e-16

```

```
[1] "explicit and electro"
```



```

      FALSE  TRUE
FALSE   2940 2469
TRUE    2571 855
[1] "Chi-square test for explicit and electro"

```

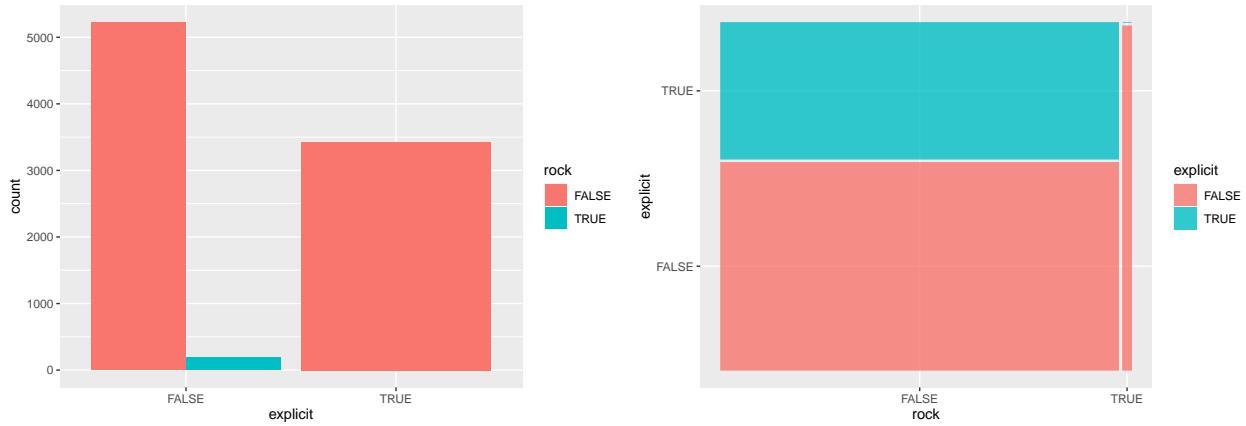
Pearson's Chi-squared test

```

data: table(cat_var1, cat_var2)
X-squared = 382.59, df = 1, p-value < 2.2e-16

```

```
[1] "explicit and rock"
```



```

      FALSE  TRUE
FALSE  5220   189
TRUE   3426    0
[1] "Chi-square test for explicit and rock"

```

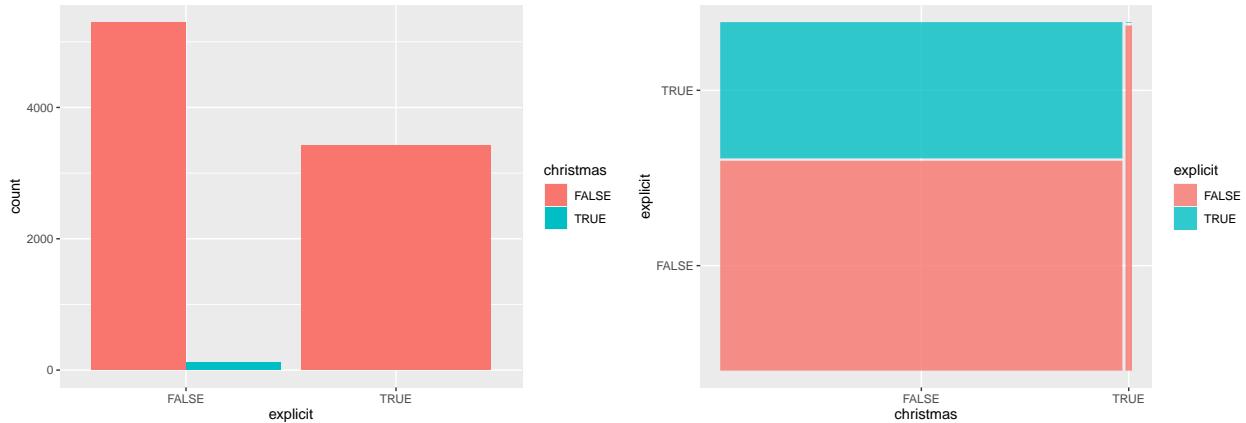
Pearson's Chi-squared test

```

data: table(cat_var1, cat_var2)
X-squared = 122.33, df = 1, p-value < 2.2e-16

```

[1] "explicit and christmas"



```

      FALSE  TRUE
FALSE  5291   118
TRUE   3426    0
[1] "Chi-square test for explicit and christmas"

```

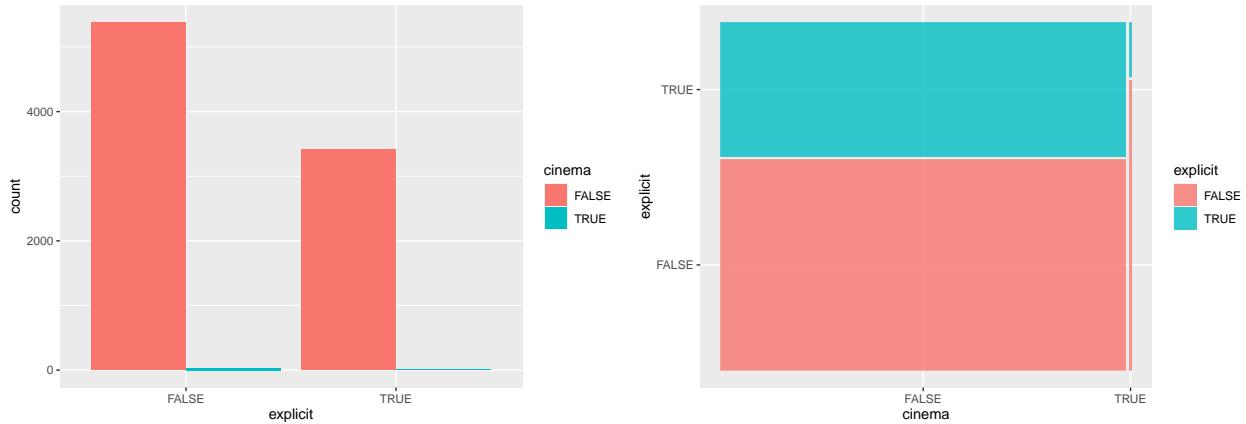
Pearson's Chi-squared test

```

data: table(cat_var1, cat_var2)
X-squared = 75.752, df = 1, p-value < 2.2e-16

```

[1] "explicit and cinema"



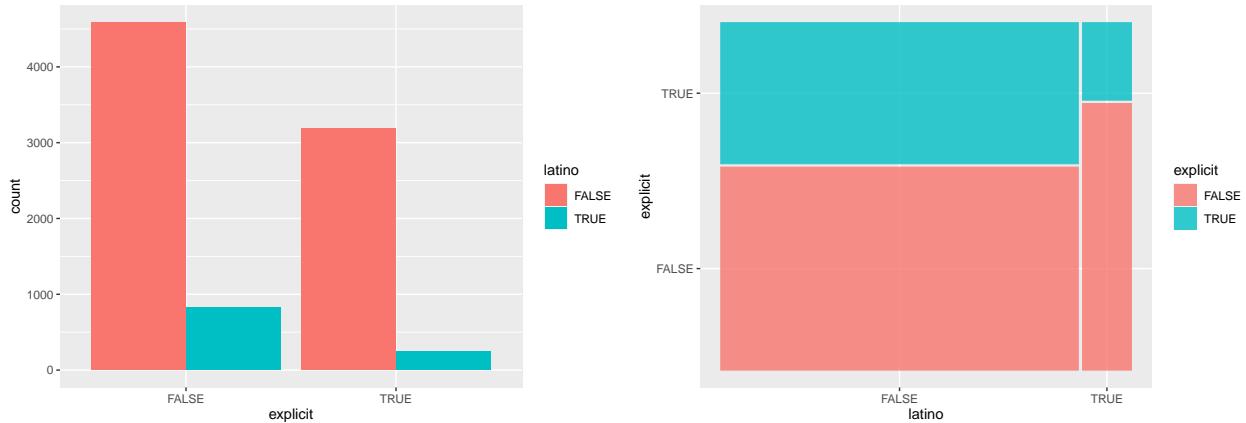
	FALSE	TRUE
FALSE	5377	32
TRUE	3420	6

[1] "Chi-square test for explicit and cinema"

Pearson's Chi-squared test

```
data: table(cat_var1, cat_var2)
X-squared = 8.4952, df = 1, p-value = 0.003561
```

[1] "explicit and latino"



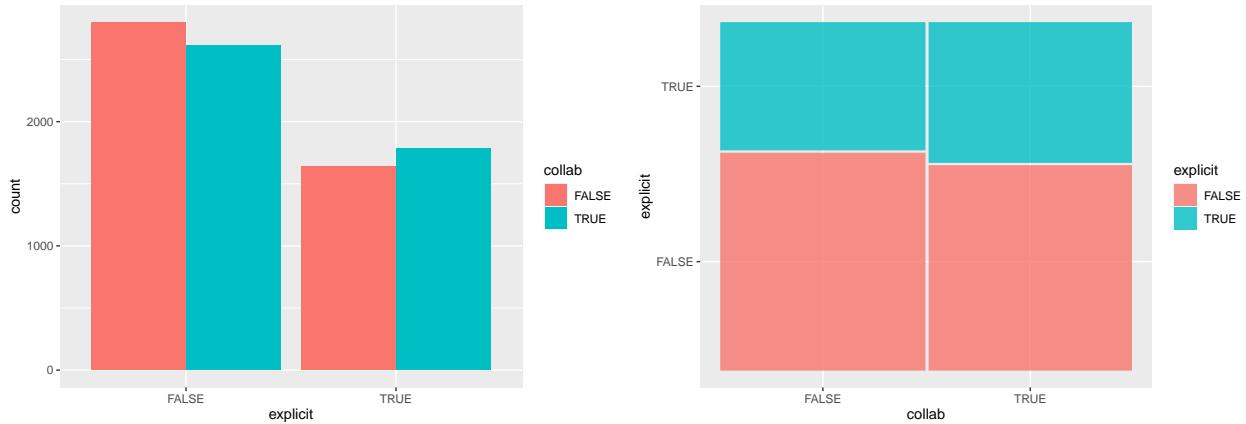
	FALSE	TRUE
FALSE	4583	826
TRUE	3186	240

[1] "Chi-square test for explicit and latino"

Pearson's Chi-squared test

```
data: table(cat_var1, cat_var2)
X-squared = 135.06, df = 1, p-value < 2.2e-16
```

[1] "explicit and collab"



```

      FALSE  TRUE
FALSE  2797 2612
TRUE   1641 1785
[1] "Chi-square test for explicit and collab"

```

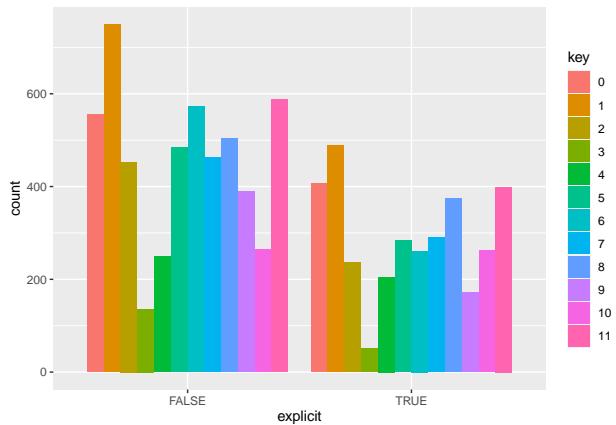
Pearson's Chi-squared test

```

data: table(cat_var1, cat_var2)
X-squared = 12.19, df = 1, p-value = 0.0004805

```

[1] "explicit and key"

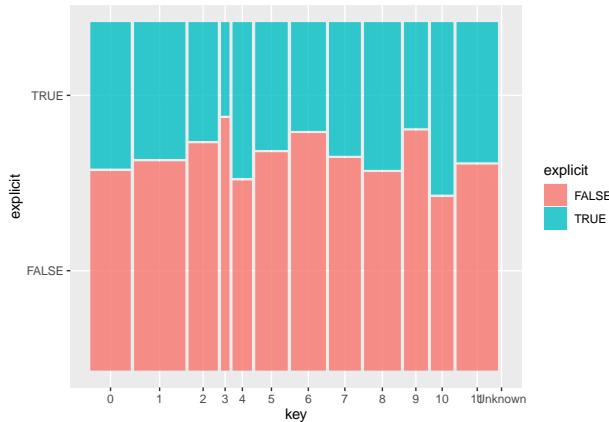


	0	1	2	3	4	5	6	7	8	9	10	11	Unknown
FALSE	555	749	453	136	250	485	573	463	504	389	264	588	0
TRUE	406	489	236	50	205	283	261	290	374	171	262	399	0

```

Warning in chisq.test(table(cat_var1, cat_var2), correct = FALSE): Chi-squared approximation may be incorrect

```

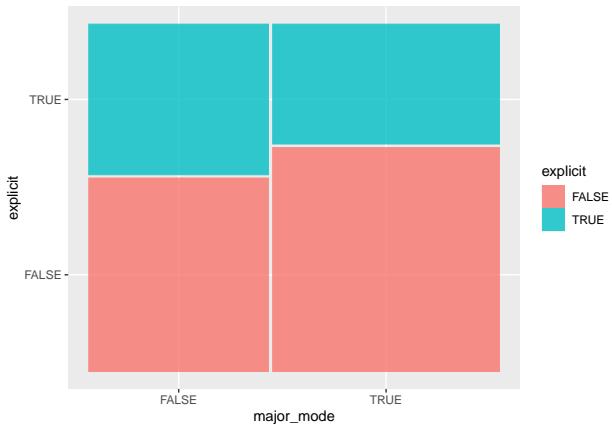
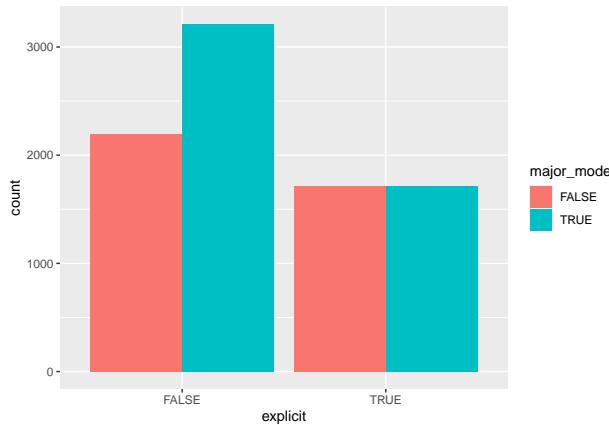


```
[1] "Chi-square test for explicit and key"
```

Pearson's Chi-squared test

```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 12, p-value = NA
```

```
[1] "explicit and major_mode"
```

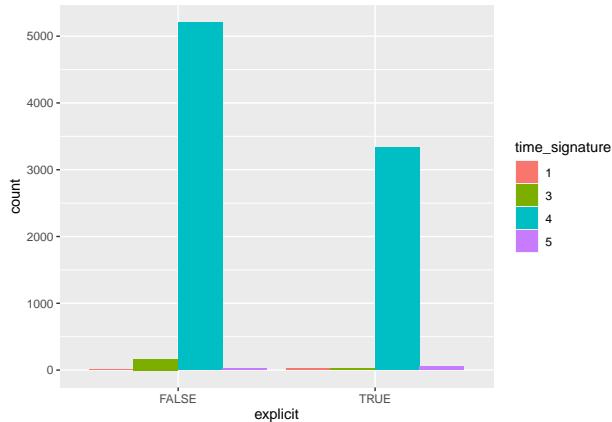


```
      FALSE  TRUE
FALSE  2198 3211
TRUE   1710 1716
[1] "Chi-square test for explicit and major_mode"
```

Pearson's Chi-squared test

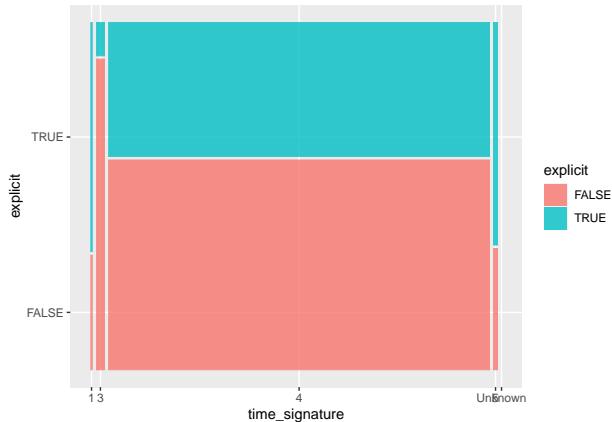
```
data: table(cat_var1, cat_var2)
X-squared = 73.171, df = 1, p-value < 2.2e-16
```

```
[1] "explicit and time_signature"
```



	1	3	4	5	Unknown
FALSE	10	167	5202	30	0
TRUE	20	18	3333	55	0

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

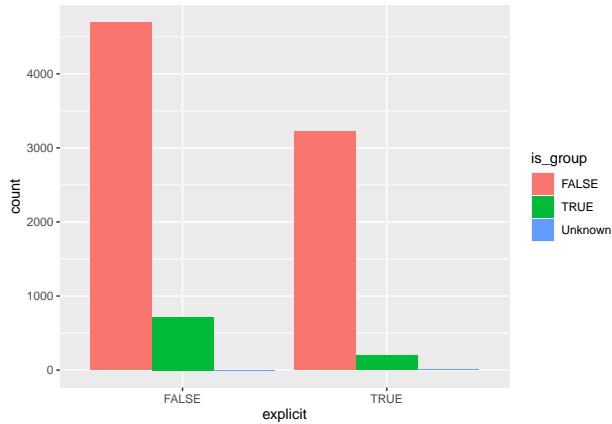


```
[1] "Chi-square test for explicit and time_signature"
```

Pearson's Chi-squared test

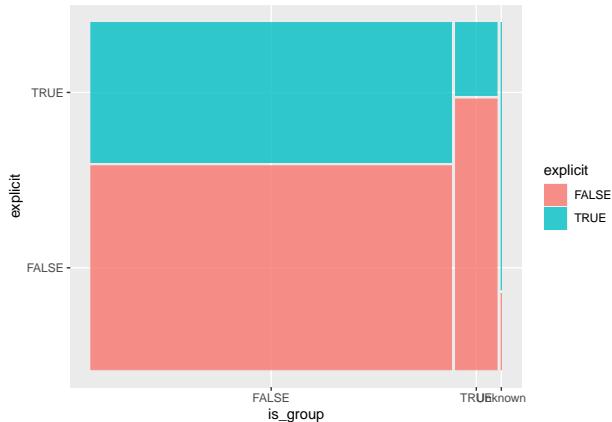
```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 4, p-value = NA
```

```
[1] "explicit and is_group"
```



	FALSE	TRUE	Unknown
FALSE	4691	716	2
TRUE	3225	194	7

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

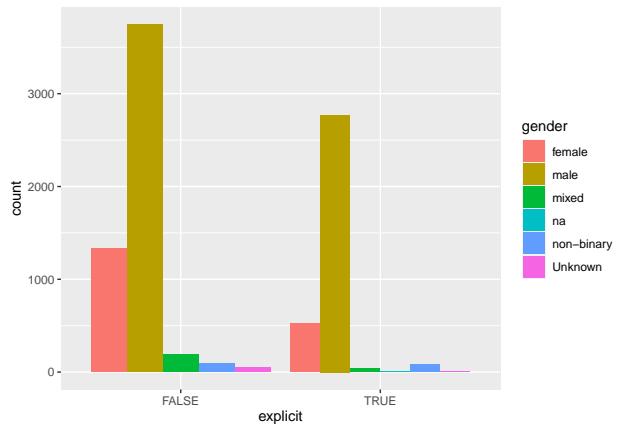


[1] "Chi-square test for explicit and is\_group"

Pearson's Chi-squared test

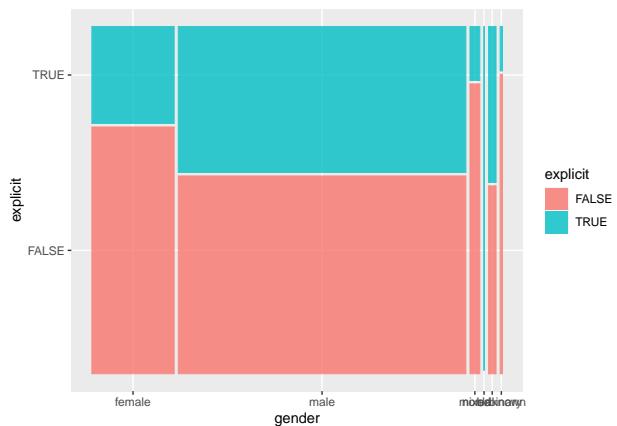
```
data: table(cat_var1, cat_var2)
X-squared = 135.45, df = 2, p-value < 2.2e-16
```

[1] "explicit and gender"



	female	male	mixed	na	non-binary	Unknown
FALSE	1336	3744	187	0	95	47
TRUE	527	2770	35	8	79	7

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

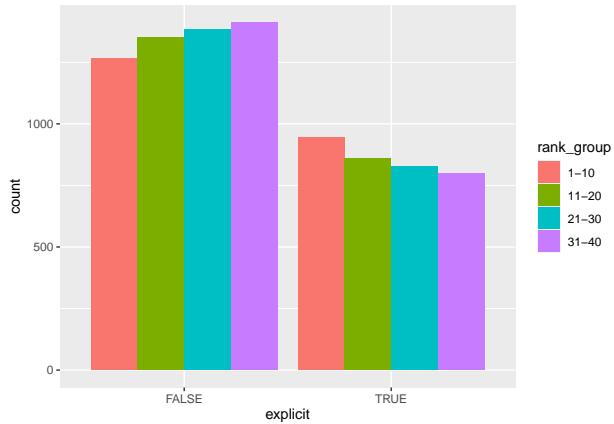


[1] "Chi-square test for explicit and gender"

Pearson's Chi-squared test

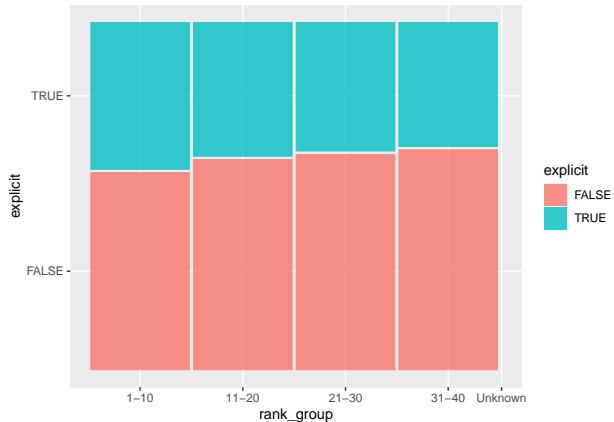
```
data: table(cat_var1, cat_var2)
X-squared = 205.38, df = 5, p-value < 2.2e-16
```

[1] "explicit and rank\_group"



	1-10	11-20	21-30	31-40	Unknown
FALSE	1265	1350	1383	1411	0
TRUE	943	860	826	797	0

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

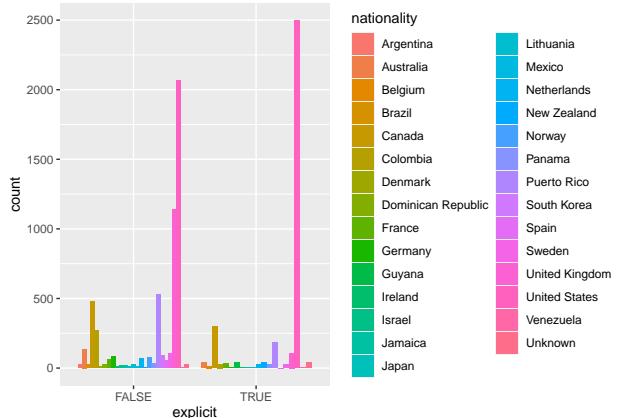


```
[1] "Chi-square test for explicit and rank_group"
```

Pearson's Chi-squared test

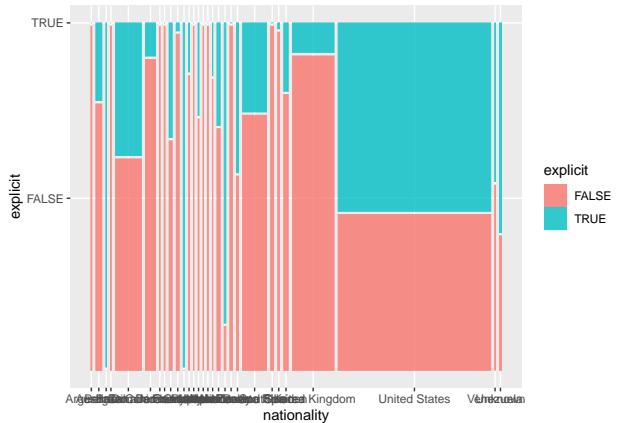
```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 4, p-value = NA
```

```
[1] "explicit and nationality"
```



	Argentina	Australia	Belgium	Brazil	Canada	Colombia	Denmark	Dominican Republic	France	Germany	Guyana	Ireland	Israel	Jamaica	Japan	Lithuania	Mexico	Netherlands	New Zealand	Norway	Panama	Puerto Rico	South Korea	Spain	Sweden	United Kingdom	United States	Venezuela	Unknown
FALSE	27	137	0	23	476	272	13																						
TRUE	0	40	15	0	299	29	0																						
	Dominican Republic	France	Germany	Guyana	Ireland	Israel	Jamaica	Japan																					
FALSE		26	60	84	0	12	19	19	9																				
TRUE		0	30	2	43	2	0	7	0																				
	Lithuania	Mexico	Netherlands	New Zealand	Norway	Panama	Puerto Rico																						
FALSE	25	11		66	6	73	35																						
TRUE	0	2		28	41	0	27																						
	South Korea	Spain	Sweden	United Kingdom	United States	Venezuela	Unknown																						
FALSE	89	57	105		1139	2064	7	25																					
TRUE	0	1	26		108	2496	6	39																					

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

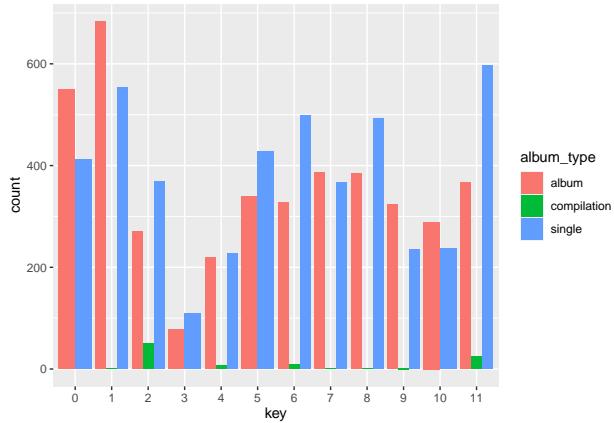


[1] "Chi-square test for explicit and nationality"

Pearson's Chi-squared test

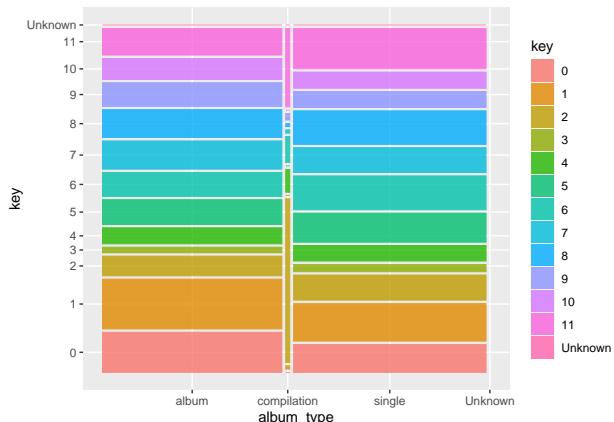
```
data: table(cat_var1, cat_var2)
X-squared = 1601.6, df = 28, p-value < 2.2e-16
```

```
[1] "key and album_type"
```



	album	compilation	single	Unknown
0	550	0	411	0
1	683	0	554	0
2	270	0	369	0
3	77	0	109	0
4	220	0	228	0
5	340	0	428	0
6	328	0	498	0
7	386	0	366	0
8	384	0	493	0
9	323	0	235	0
10	289	0	237	0
11	367	0	596	0
Unknown	0	0	0	0

```
Warning in chisq.test(table(cat_var1, cat_var2), correct = FALSE): Chi-squared approximation may be incorrect
```



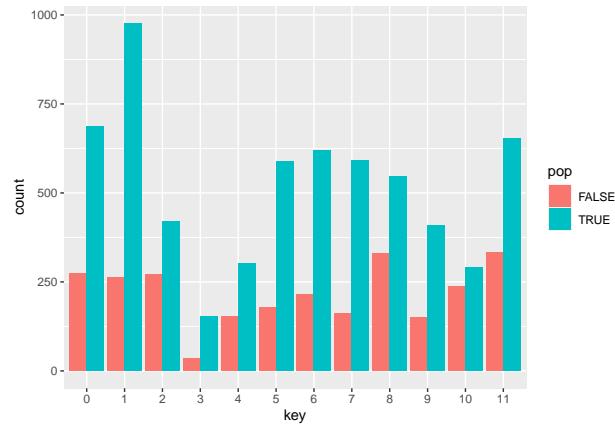
```
[1] "Chi-square test for key and album_type"
```

Pearson's Chi-squared test

```
data: table(cat_var1, cat_var2)
```

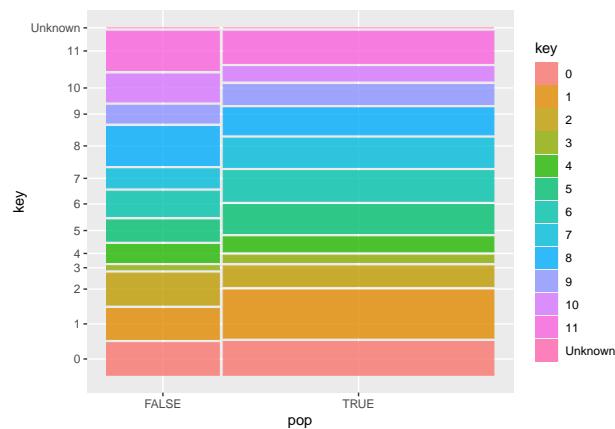
X-squared = NaN, df = 36, p-value = NA

[1] "key and pop"



	FALSE	TRUE
0	275	686
1	262	976
2	270	419
3	34	152
4	152	303
5	179	589
6	215	619
7	161	592
8	331	547
9	150	410
10	236	290
11	334	653
Unknown	0	0

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

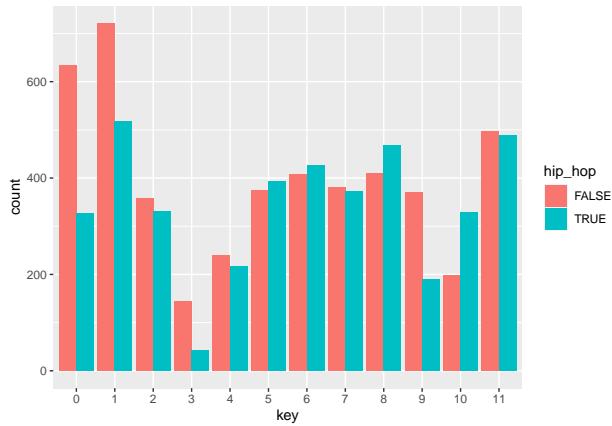


[1] "Chi-square test for key and pop"

Pearson's Chi-squared test

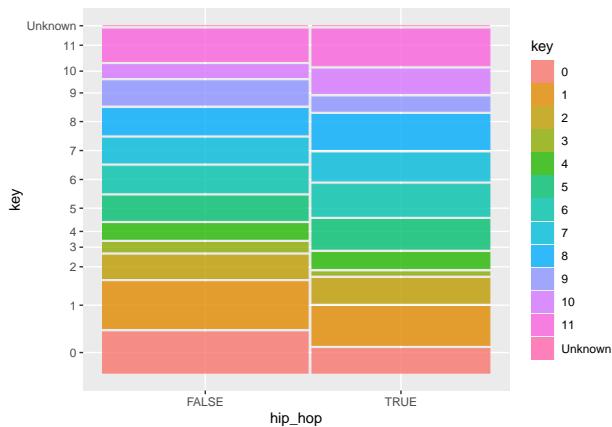
```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 12, p-value = NA
```

```
[1] "key and hip_hop"
```



	FALSE	TRUE
0	634	327
1	721	517
2	359	330
3	144	42
4	239	216
5	374	394
6	408	426
7	381	372
8	409	469
9	371	189
10	198	328
11	498	489
Unknown	0	0

```
Warning in chisq.test(table(cat_var1, cat_var2), correct = FALSE): Chi-squared approximation may be incorrect
```

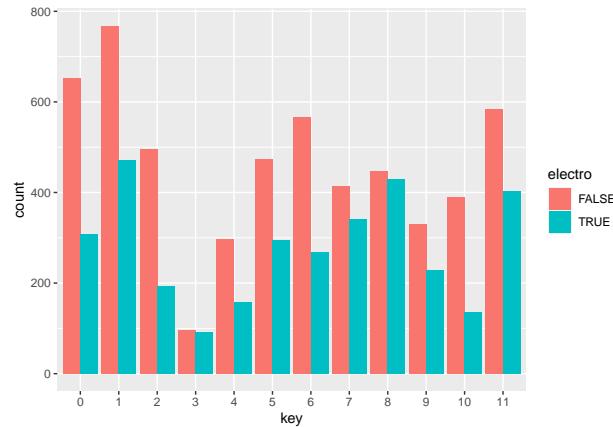


```
[1] "Chi-square test for key and hip_hop"
```

```
Pearson's Chi-squared test
```

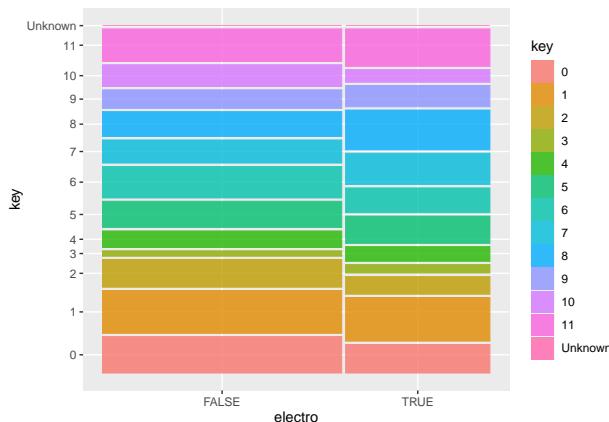
```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 12, p-value = NA
```

[1] "key and electro"



	FALSE	TRUE
0	652	309
1	767	471
2	496	193
3	95	91
4	297	158
5	473	295
6	566	268
7	413	340
8	448	430
9	331	229
10	390	136
11	583	404
Unknown	0	0

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

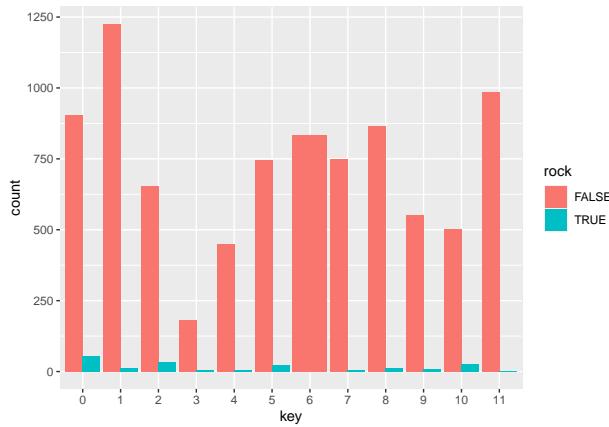


[1] "Chi-square test for key and electro"

### Pearson's Chi-squared test

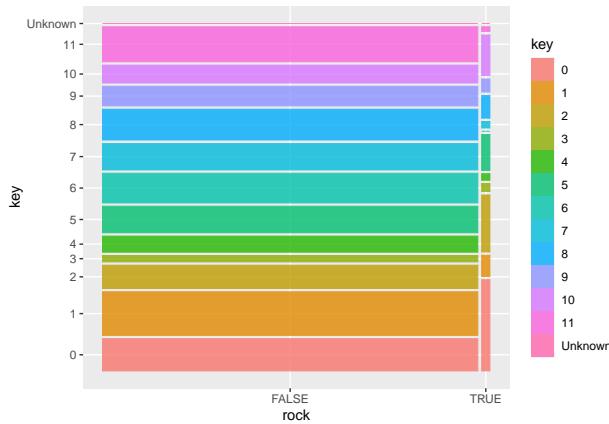
```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 12, p-value = NA
```

[1] "key and rock"



	FALSE	TRUE
0	905	56
1	1225	13
2	654	35
3	181	5
4	451	4
5	746	22
6	834	0
7	749	4
8	864	14
9	552	8
10	501	25
11	984	3
Unknown	0	0

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

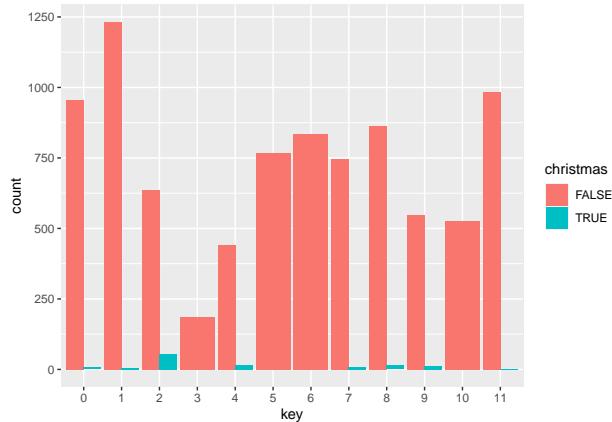


[1] "Chi-square test for key and rock"

### Pearson's Chi-squared test

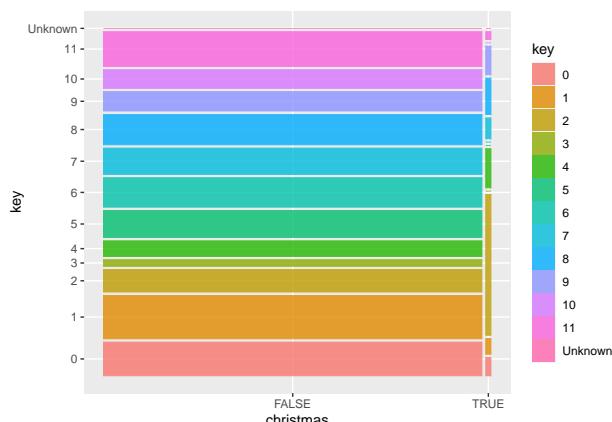
```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 12, p-value = NA
```

```
[1] "key and christmas"
```



	FALSE	TRUE
0	954	7
1	1232	6
2	635	54
3	186	0
4	440	15
5	768	0
6	834	0
7	745	8
8	864	14
9	549	11
10	526	0
11	984	3
Unknown	0	0

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

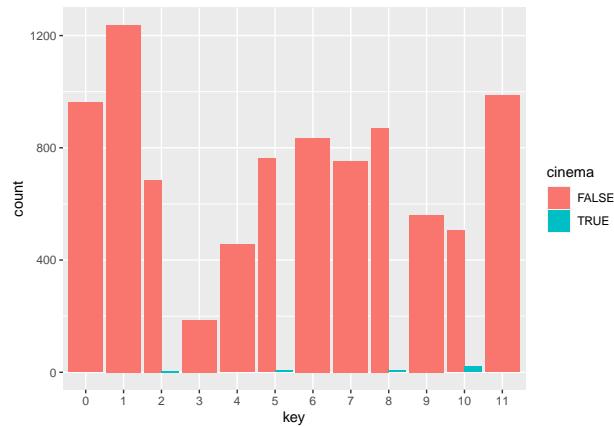


```
[1] "Chi-square test for key and christmas"
```

Pearson's Chi-squared test

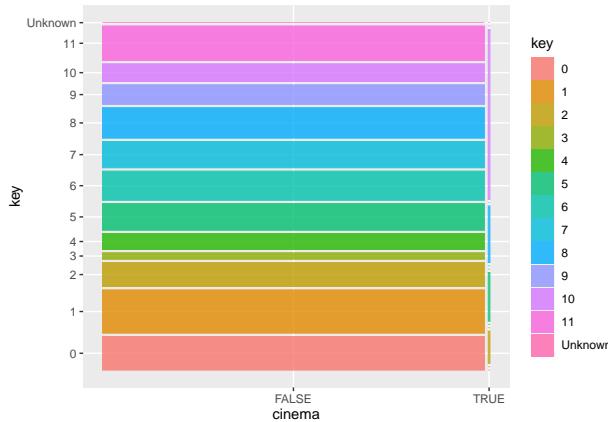
```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 12, p-value = NA
```

```
[1] "key and cinema"
```



	FALSE	TRUE
0	961	0
1	1238	0
2	685	4
3	186	0
4	455	0
5	762	6
6	834	0
7	753	0
8	871	7
9	560	0
10	505	21
11	987	0
Unknown	0	0

```
Warning in chisq.test(table(cat_var1, cat_var2), correct = FALSE): Chi-squared approximation may be incorrect
```

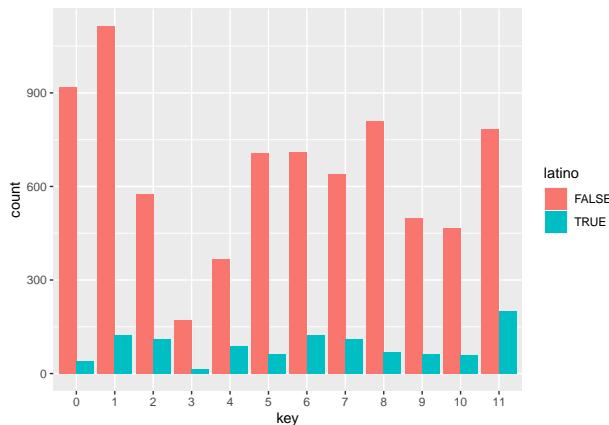


```
[1] "Chi-square test for key and cinema"
```

Pearson's Chi-squared test

```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 12, p-value = NA
```

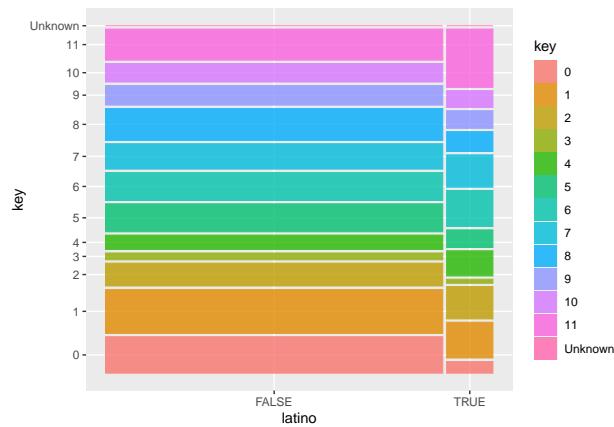
```
[1] "key and latino"
```



	FALSE	TRUE
0	920	41
1	1114	124
2	577	112
3	172	14
4	368	87
5	707	61
6	709	125
7	641	112
8	809	69
9	499	61
10	468	58
11	785	202
Unknown	0	0

```
Warning in chisq.test(table(cat_var1, cat_var2), correct = FALSE): Chi-squared
```

approximation may be incorrect

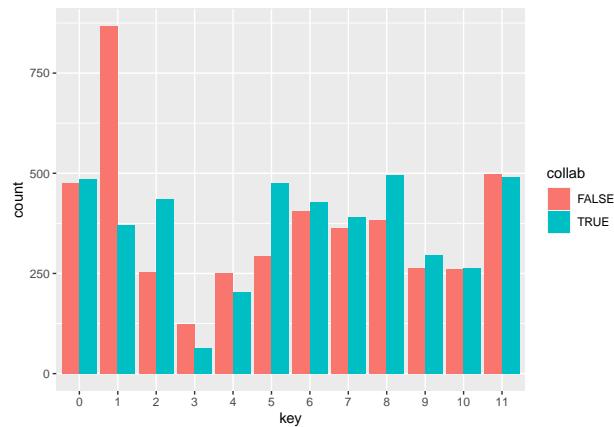


[1] "Chi-square test for key and latino"

Pearson's Chi-squared test

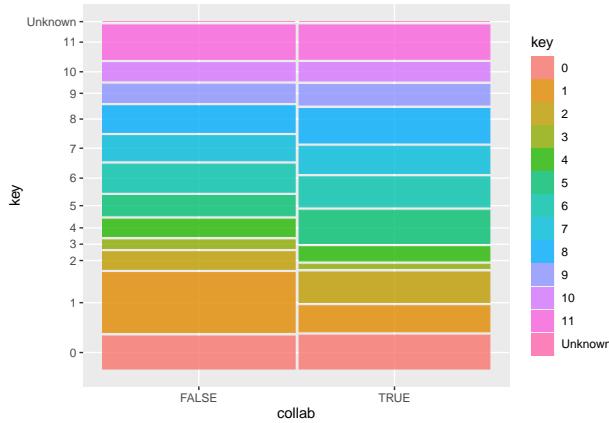
```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 12, p-value = NA
```

[1] "key and collab"



	FALSE	TRUE
0	476	485
1	867	371
2	253	436
3	123	63
4	252	203
5	293	475
6	405	429
7	363	390
8	383	495
9	264	296
10	262	264
11	497	490
Unknown	0	0

```
Warning in chisq.test(table(cat_var1, cat_var2), correct = FALSE): Chi-squared approximation may be incorrect
```

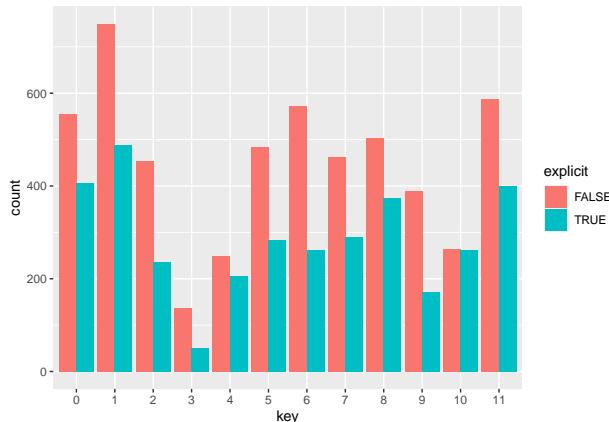


```
[1] "Chi-square test for key and collab"
```

Pearson's Chi-squared test

```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 12, p-value = NA
```

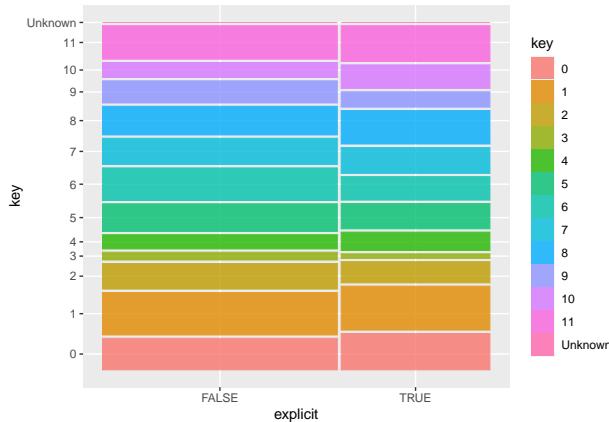
```
[1] "key and explicit"
```



	FALSE	TRUE
0	555	406
1	749	489
2	453	236
3	136	50
4	250	205
5	485	283
6	573	261
7	463	290
8	504	374
9	389	171
10	264	262
11	588	399

Unknown 0 0

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

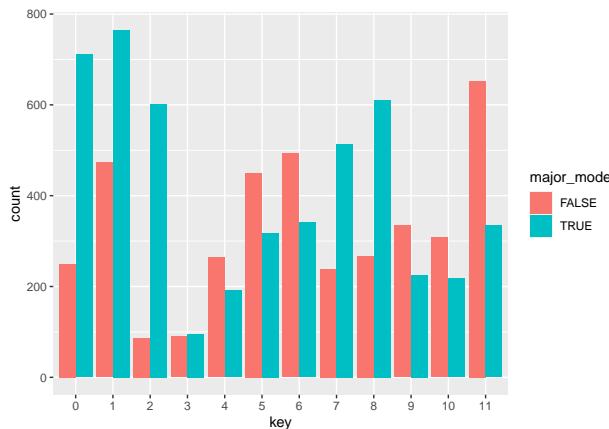


[1] "Chi-square test for key and explicit"

Pearson's Chi-squared test

```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 12, p-value = NA
```

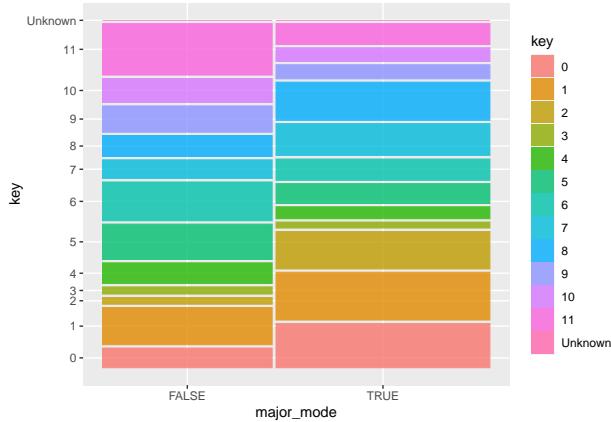
[1] "key and major\_mode"



	FALSE	TRUE
0	250	711
1	473	765
2	87	602
3	90	96
4	264	191
5	450	318
6	493	341
7	239	514
8	267	611
9	334	226
10	308	218

```
11      653  334
Unknown    0    0
```

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

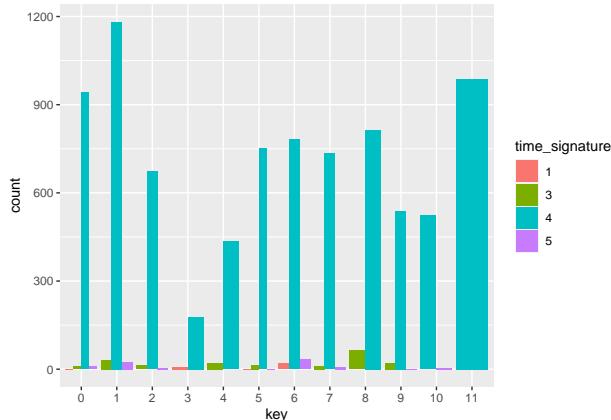


```
[1] "Chi-square test for key and major_mode"
```

Pearson's Chi-squared test

```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 12, p-value = NA
```

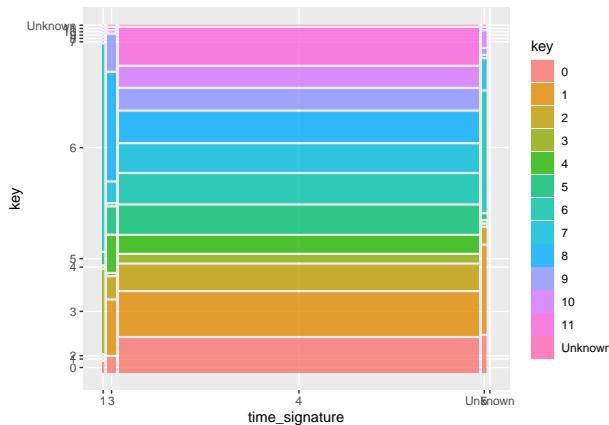
```
[1] "key and time_signature"
```



	1	3	4	5	Unknown
0	1	9	941	10	0
1	0	32	1182	24	0
2	0	12	673	4	0
3	8	0	178	0	0
4	0	21	434	0	0
5	1	15	751	1	0
6	20	0	781	33	0
7	0	11	734	8	0
8	0	64	814	0	0
9	0	21	538	1	0

10	0	0	522	4	0
11	0	0	987	0	0
Unknown	0	0	0	0	0

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

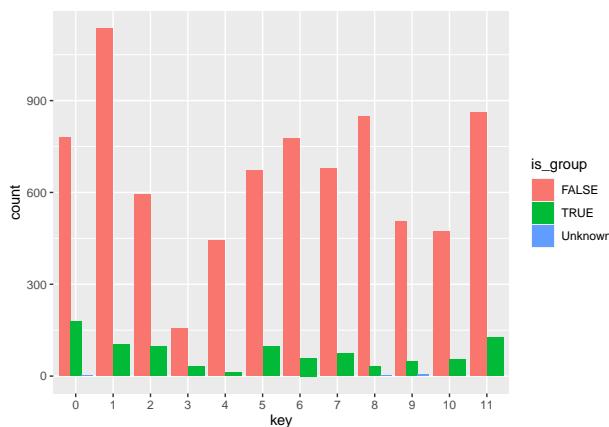


[1] "Chi-square test for key and time\_signature"

Pearson's Chi-squared test

```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 48, p-value = NA
```

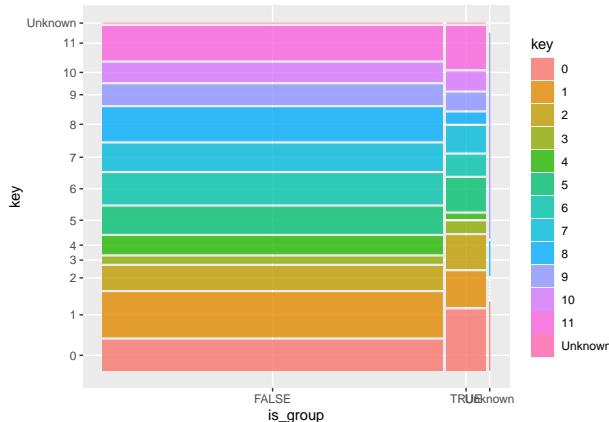
[1] "key and is\_group"



	FALSE	TRUE	Unknown
0	780	179	2
1	1135	103	0
2	592	97	0
3	155	31	0
4	442	13	0
5	672	96	0
6	775	59	0
7	678	75	0
8	847	30	1

9	505	49	6
10	473	53	0
11	862	125	0
Unknown	0	0	0

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

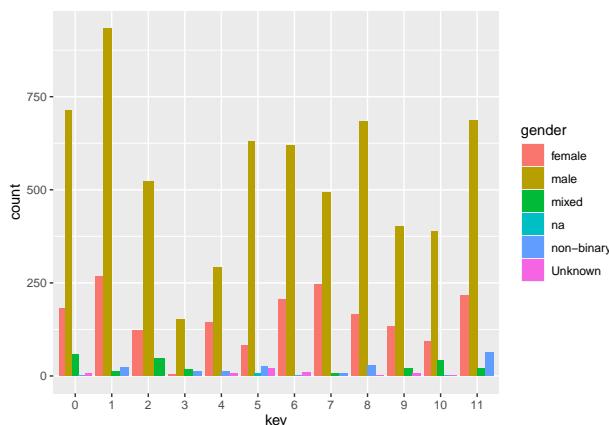


[1] "Chi-square test for key and is\_group"

Pearson's Chi-squared test

```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 24, p-value = NA
```

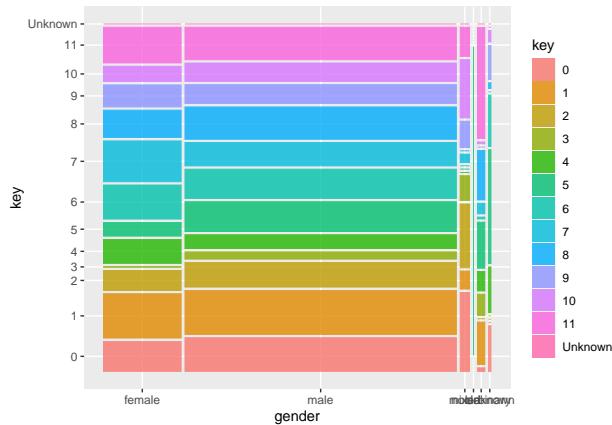
[1] "key and gender"



	female	male	mixed	na	non-binary	Unknown
0	182	712	57	0	2	8
1	268	933	13	0	24	0
2	121	522	46	0	0	0
3	3	153	18	0	12	0
4	145	291	0	0	11	8
5	83	631	0	8	26	20
6	206	618	0	0	1	9
7	247	494	6	0	6	0

8	166	683	0	0	28	1
9	133	402	19	0	0	6
10	93	388	42	0	1	2
11	216	687	21	0	63	0
Unknown	0	0	0	0	0	0

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

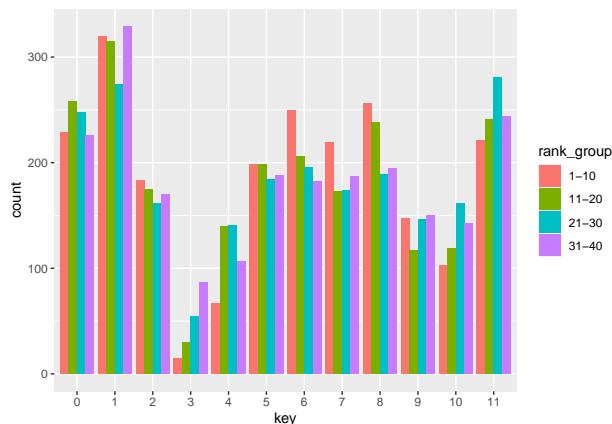


[1] "Chi-square test for key and gender"

Pearson's Chi-squared test

```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 60, p-value = NA
```

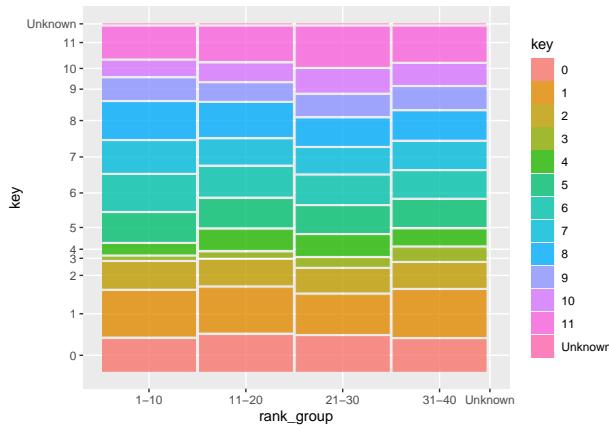
[1] "key and rank\_group"



	1-10	11-20	21-30	31-40	Unknown
0	229	258	248	226	0
1	320	315	274	329	0
2	183	175	161	170	0
3	15	30	54	87	0
4	67	140	141	107	0
5	198	198	184	188	0
6	250	206	196	182	0

7	219	173	174	187	0
8	256	238	189	195	0
9	147	117	146	150	0
10	103	119	161	143	0
11	221	241	281	244	0
Unknown	0	0	0	0	0

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

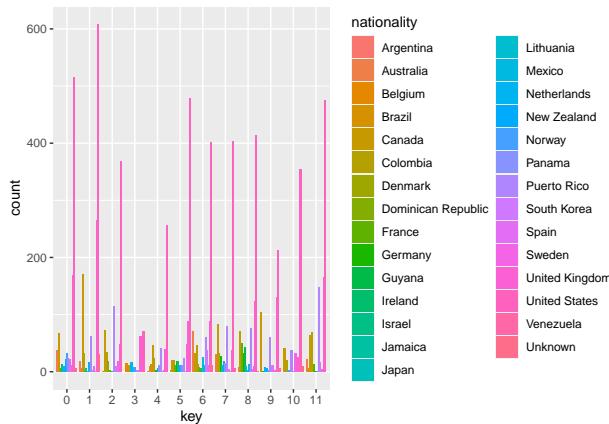


[1] "Chi-square test for key and rank\_group"

Pearson's Chi-squared test

```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 48, p-value = NA
```

[1] "key and nationality"



	Argentina	Australia	Belgium	Brazil	Canada	Colombia	Denmark
0	0	37	0	0	67	1	0
1	18	6	0	0	171	33	0
2	0	0	0	1	73	34	0
3	0	0	15	0	0	12	0
4	1	9	0	14	46	23	0
5	0	2	0	0	21	20	0

6	0	71	0	1	32	46	13
7	0	30	0	0	84	33	0
8	8	0	0	0	71	10	0
9	0	0	0	0	104	0	0
10	0	0	0	0	42	20	0
11	0	22	0	7	64	69	0
Unknown	0	0	0	0	0	0	0

	Dominican Republic	France	Germany	Guyana	Ireland	Israel	Jamaica	Japan
0	0	6	0	0	14	0	0	0
1	0	0	1	0	0	0	7	0
2	18	3	0	0	0	0	1	0
3	0	0	0	0	0	0	0	0
4	0	0	3	0	0	0	0	0
5	0	12	19	0	0	19	0	0
6	8	6	1	0	0	0	7	0
7	0	0	28	0	0	0	11	0
8	0	50	32	43	0	0	0	9
9	0	0	1	0	0	0	0	0
10	0	0	0	0	0	0	0	0
11	0	13	1	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0

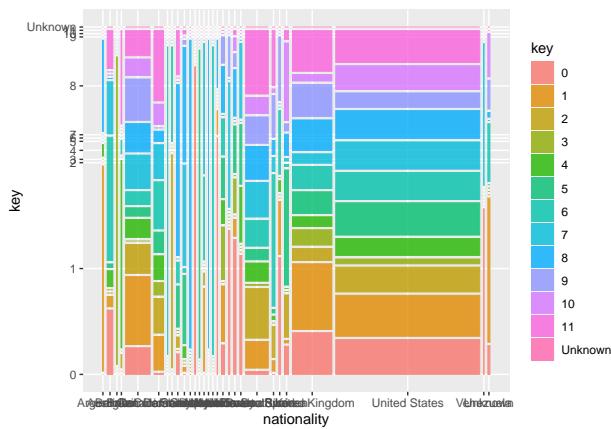
	Lithuania	Mexico	Netherlands	New Zealand	Norway	Panama	Puerto Rico
0	0	10	9	22	32	24	7
1	0	1	17	0	4	0	62
2	0	0	0	0	0	0	115
3	0	0	16	0	8	0	2
4	0	0	7	0	0	11	42
5	0	0	12	0	11	12	24
6	25	0	11	0	0	0	60
7	0	0	0	19	0	15	80
8	0	2	14	0	11	0	76
9	0	0	8	6	3	0	61
10	0	0	0	0	3	0	38
11	0	0	0	0	1	0	148
Unknown	0	0	0	0	0	0	0

	South Korea	Spain	Sweden	United Kingdom	United States	Venezuela
0	0	22	12	169	516	7
1	3	10	1	266	608	0
2	9	0	18	49	368	0
3	0	0	0	62	71	0
4	1	2	0	39	257	0
5	1	0	49	88	478	0
6	38	12	1	89	401	0
7	4	0	1	38	404	6
8	4	0	9	124	414	0
9	12	12	3	131	213	0
10	1	0	33	26	354	0
11	16	0	4	166	476	0
Unknown	0	0	0	0	0	0

Unknown

0	6
1	30
2	0
3	0
4	0
5	0
6	12
7	0
8	1
9	6
10	9
11	0
Unknown	0

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

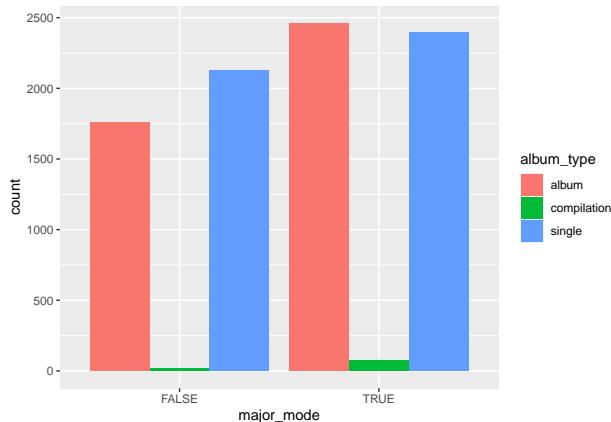


[1] "Chi-square test for key and nationality"

Pearson's Chi-squared test

```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 336, p-value = NA
```

[1] "major\_mode and album\_type"

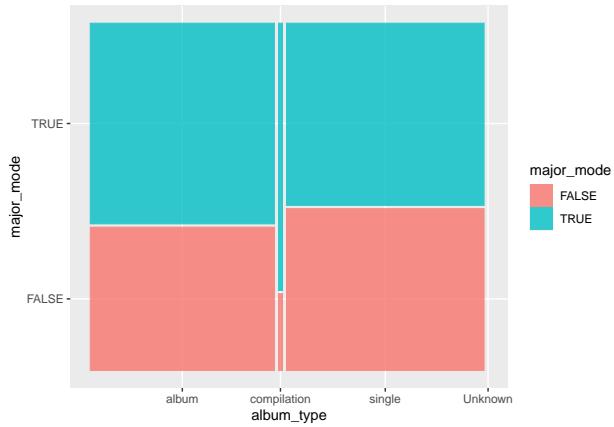


```

      album compilation single Unknown
FALSE    1758           21   2129       0
TRUE     2459           73   2395       0

```

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect



[1] "Chi-square test for major\_mode and album\_type"

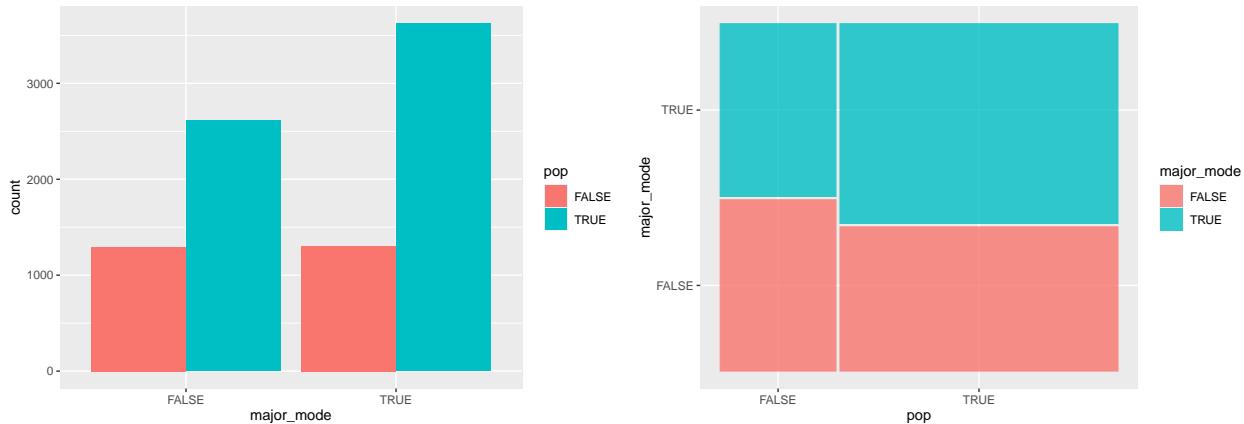
Pearson's Chi-squared test

```

data: table(cat_var1, cat_var2)
X-squared = NaN, df = 3, p-value = NA

```

[1] "major\_mode and pop"



```

      FALSE  TRUE
FALSE    1294 2614
TRUE     1305 3622

```

[1] "Chi-square test for major\_mode and pop"

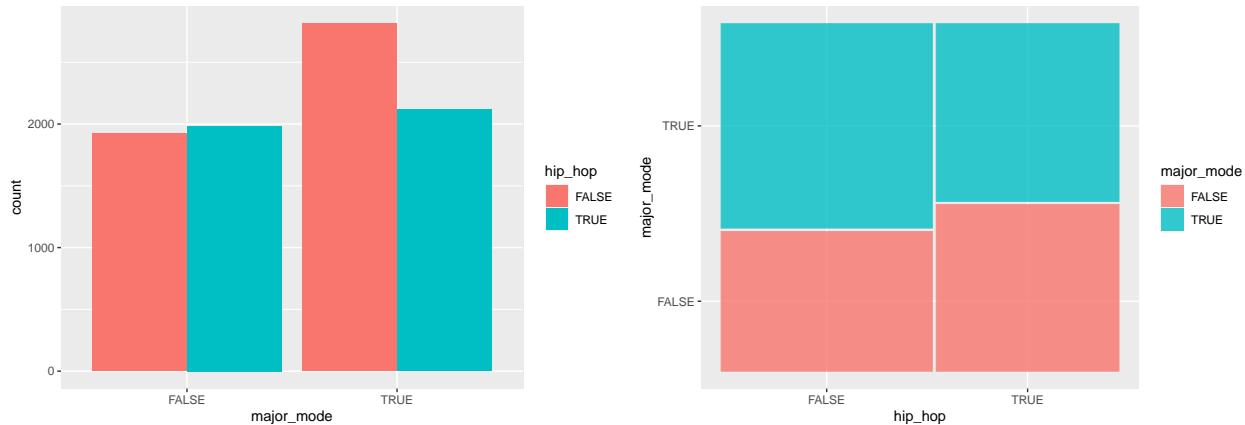
Pearson's Chi-squared test

```

data: table(cat_var1, cat_var2)
X-squared = 46.066, df = 1, p-value = 1.143e-11

```

```
[1] "major_mode and hip_hop"
```

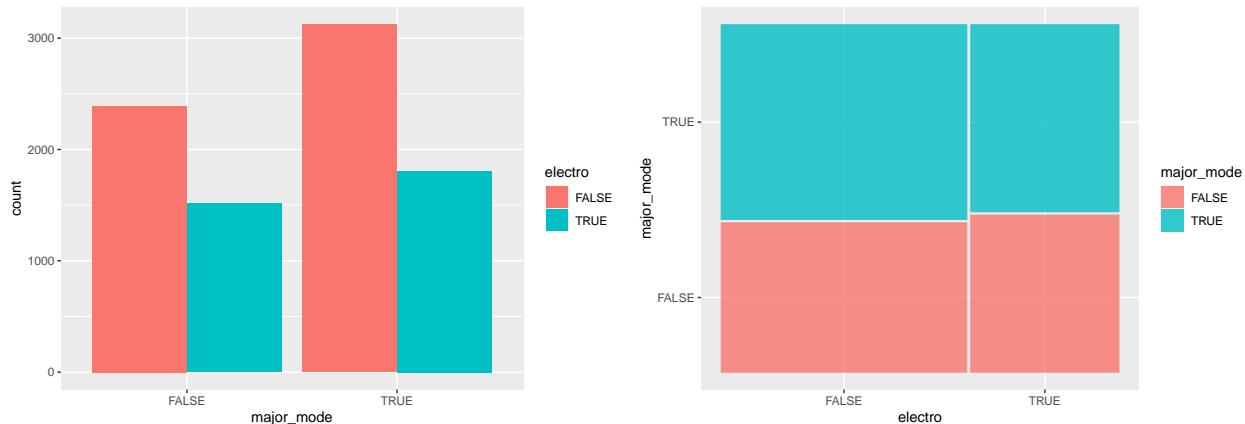


```
      FALSE  TRUE  
FALSE  1924 1984  
TRUE   2812 2115  
[1] "Chi-square test for major_mode and hip_hop"
```

Pearson's Chi-squared test

```
data: table(cat_var1, cat_var2)  
X-squared = 53.875, df = 1, p-value = 2.136e-13
```

```
[1] "major_mode and electro"
```

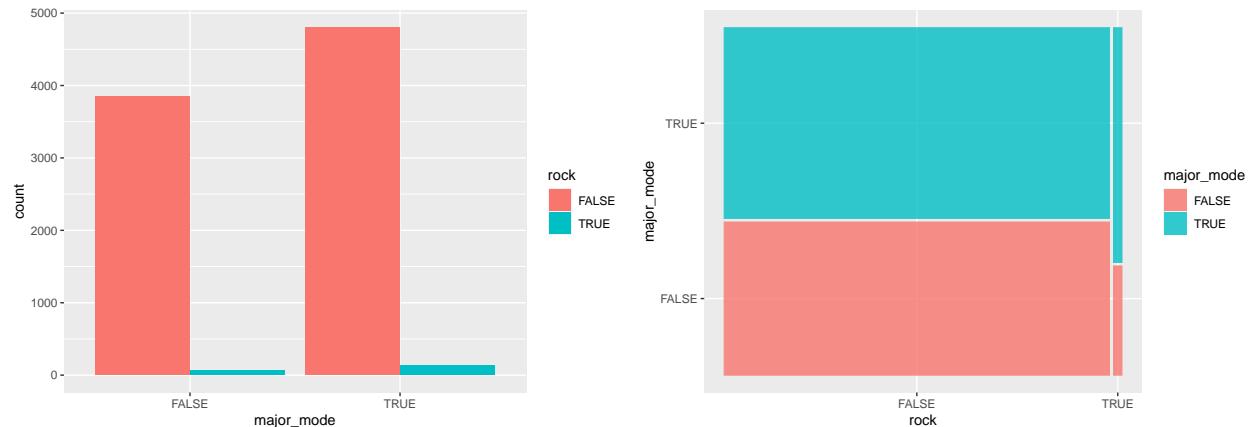


```
      FALSE  TRUE  
FALSE  2391 1517  
TRUE   3120 1807  
[1] "Chi-square test for major_mode and electro"
```

Pearson's Chi-squared test

```
data: table(cat_var1, cat_var2)  
X-squared = 4.2622, df = 1, p-value = 0.03897
```

```
[1] "major_mode and rock"
```

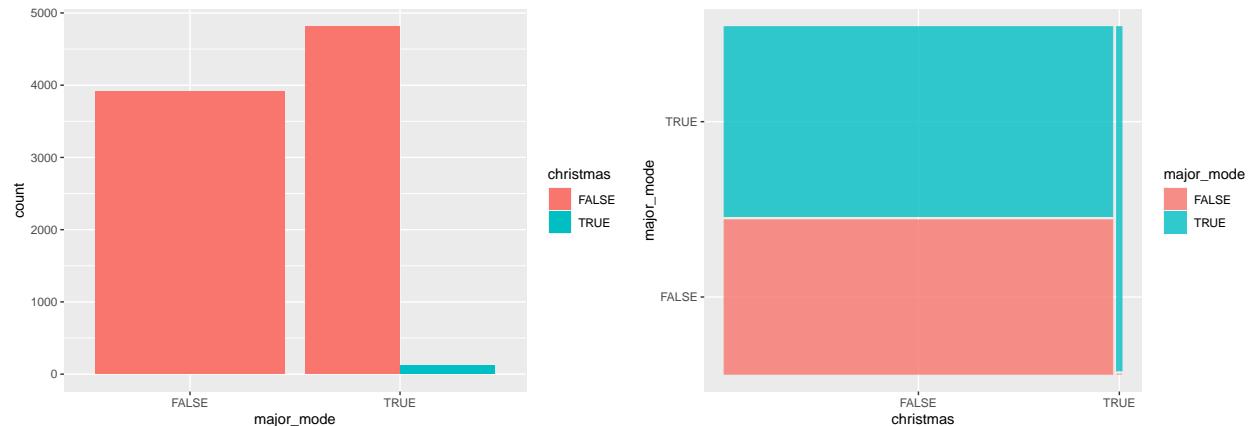


```
      FALSE  TRUE  
FALSE  3848   60  
TRUE   4798  129  
[1] "Chi-square test for major_mode and rock"
```

Pearson's Chi-squared test

```
data: table(cat_var1, cat_var2)  
X-squared = 12.208, df = 1, p-value = 0.0004758
```

```
[1] "major_mode and christmas"
```

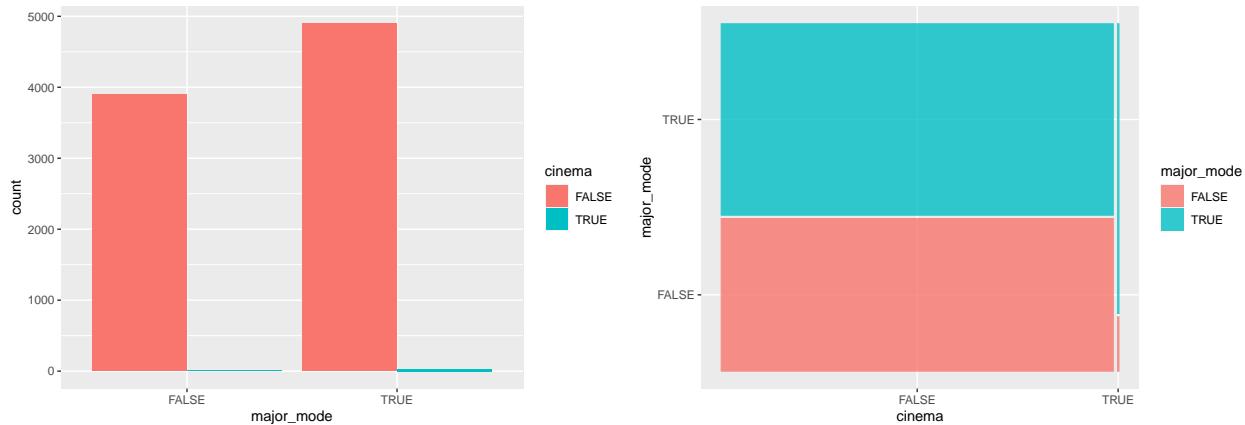


```
      FALSE  TRUE  
FALSE  3908   0  
TRUE   4809  118  
[1] "Chi-square test for major_mode and christmas"
```

Pearson's Chi-squared test

```
data: table(cat_var1, cat_var2)  
X-squared = 94.862, df = 1, p-value < 2.2e-16
```

```
[1] "major_mode and cinema"
```



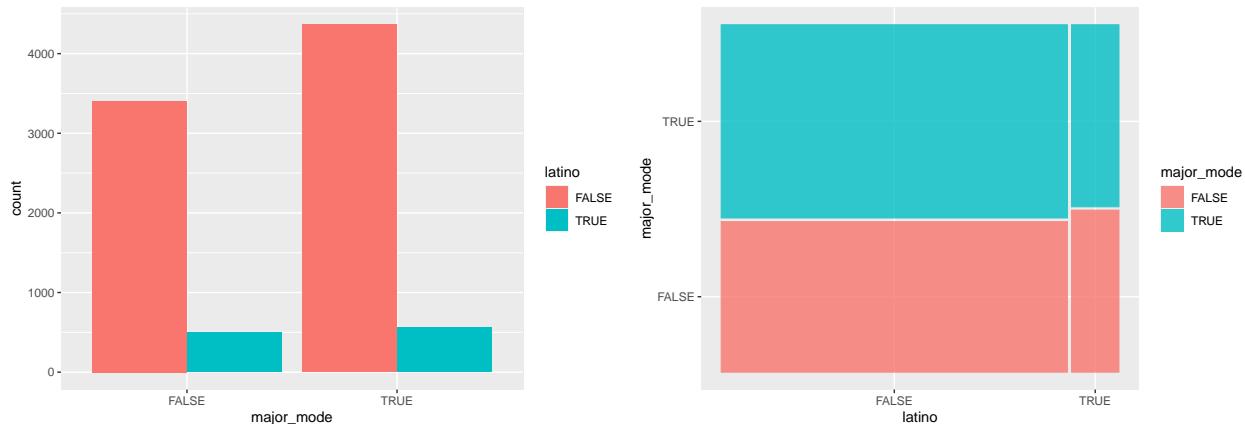
	FALSE	TRUE
FALSE	3902	6
TRUE	4895	32

```
[1] "Chi-square test for major_mode and cinema"
```

Pearson's Chi-squared test

```
data: table(cat_var1, cat_var2)
X-squared = 12.517, df = 1, p-value = 0.0004032
```

```
[1] "major_mode and latino"
```



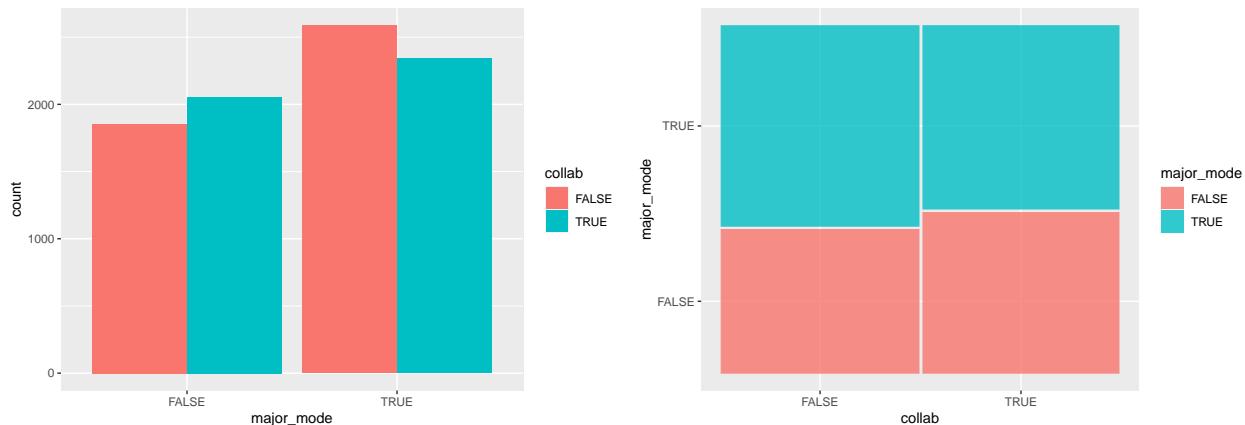
	FALSE	TRUE
FALSE	3406	502
TRUE	4363	564

```
[1] "Chi-square test for major_mode and latino"
```

Pearson's Chi-squared test

```
data: table(cat_var1, cat_var2)
X-squared = 4.0164, df = 1, p-value = 0.04506
```

```
[1] "major_mode and collab"
```

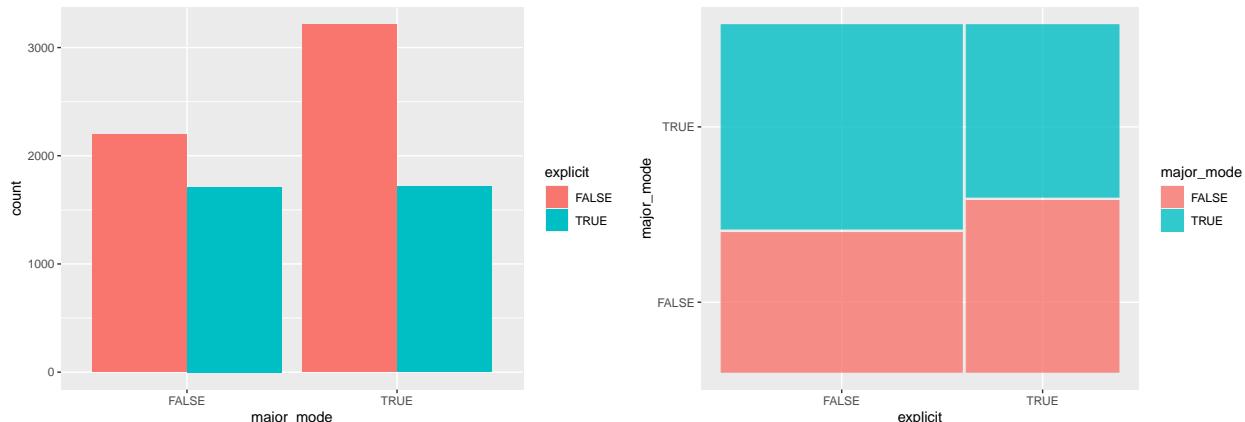


```
      FALSE  TRUE  
FALSE  1853 2055  
TRUE   2585 2342  
[1] "Chi-square test for major_mode and collab"
```

Pearson's Chi-squared test

```
data: table(cat_var1, cat_var2)  
X-squared = 22.236, df = 1, p-value = 2.411e-06
```

```
[1] "major_mode and explicit"
```

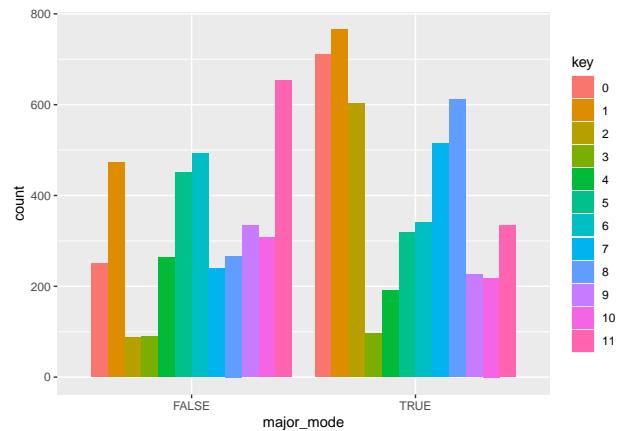


```
      FALSE  TRUE  
FALSE  2198 1710  
TRUE   3211 1716  
[1] "Chi-square test for major_mode and explicit"
```

Pearson's Chi-squared test

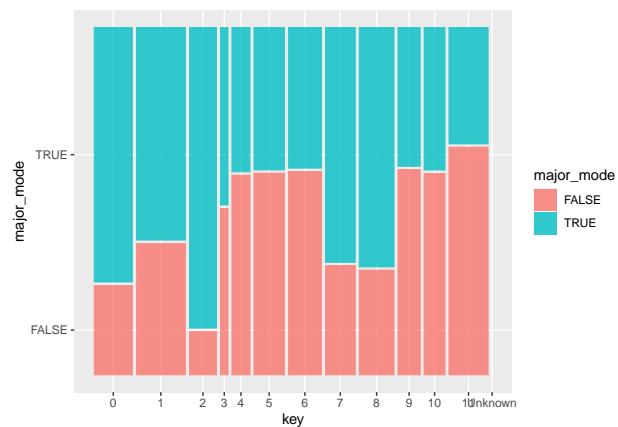
```
data: table(cat_var1, cat_var2)  
X-squared = 73.171, df = 1, p-value < 2.2e-16
```

```
[1] "major_mode and key"
```



	0	1	2	3	4	5	6	7	8	9	10	11	Unknown
FALSE	250	473	87	90	264	450	493	239	267	334	308	653	0
TRUE	711	765	602	96	191	318	341	514	611	226	218	334	0

```
Warning in chisq.test(table(cat_var1, cat_var2), correct = FALSE): Chi-squared approximation may be incorrect
```

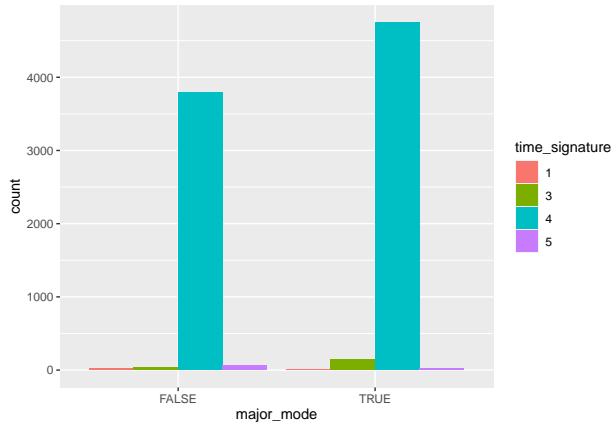


```
[1] "Chi-square test for major_mode and key"
```

Pearson's Chi-squared test

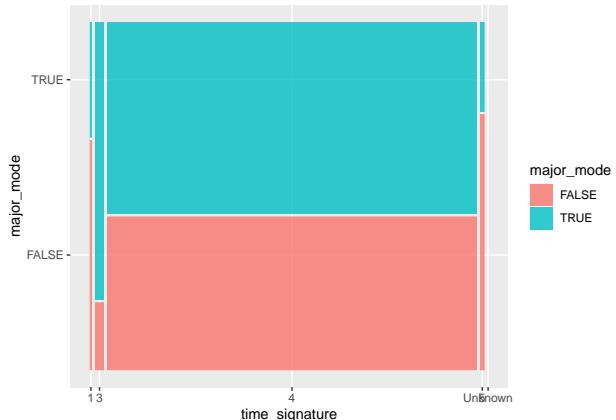
```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 12, p-value = NA
```

```
[1] "major_mode and time_signature"
```



	1	3	4	5	Unknown
FALSE	20	36	3789	63	0
TRUE	10	149	4746	22	0

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

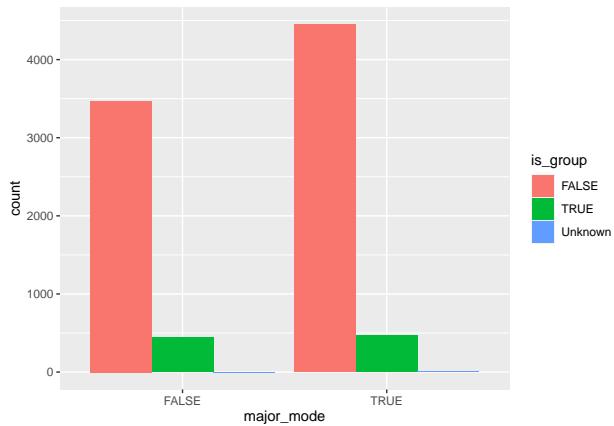


```
[1] "Chi-square test for major_mode and time_signature"
```

```
Pearson's Chi-squared test
```

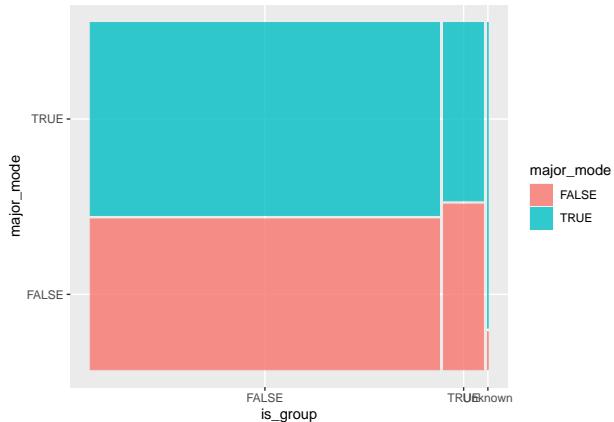
```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 4, p-value = NA
```

```
[1] "major_mode and is_group"
```



	FALSE	TRUE	Unknown
FALSE	3469	438	1
TRUE	4447	472	8

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

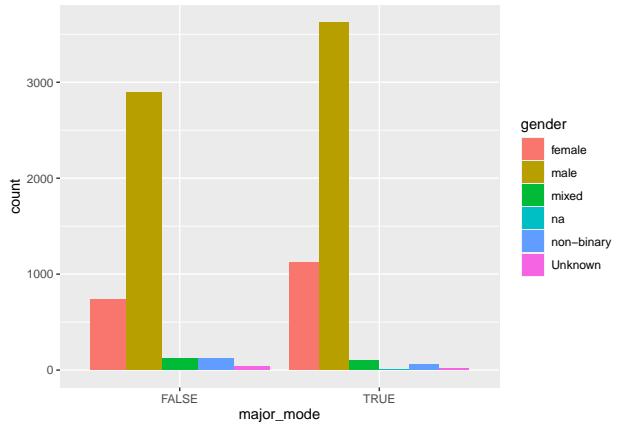


```
[1] "Chi-square test for major_mode and is_group"
```

Pearson's Chi-squared test

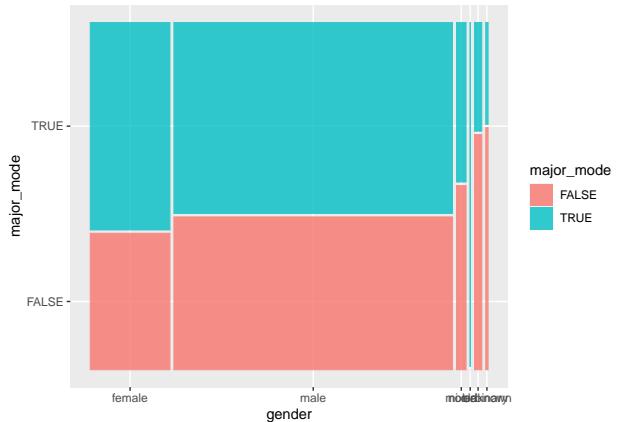
```
data: table(cat_var1, cat_var2)
X-squared = 10.151, df = 2, p-value = 0.006248
```

```
[1] "major_mode and gender"
```



	female	male	mixed	na	non-binary	Unknown
FALSE	739	2893	119	0	119	38
TRUE	1124	3621	103	8	55	16

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

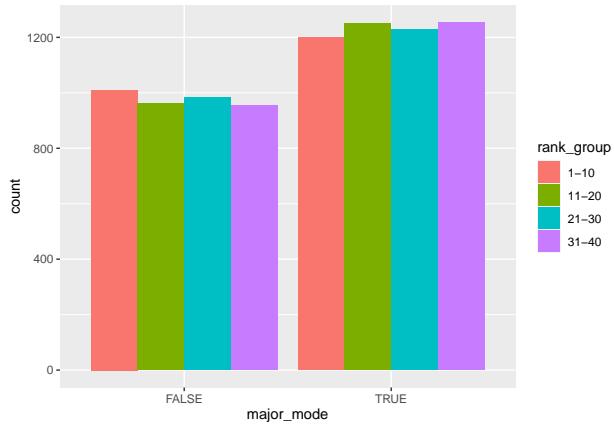


[1] "Chi-square test for major\_mode and gender"

Pearson's Chi-squared test

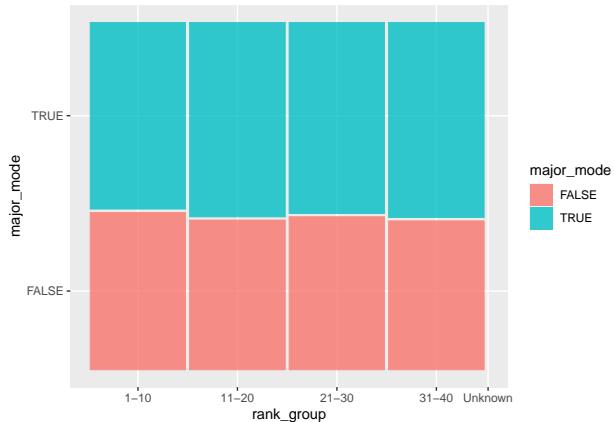
```
data: table(cat_var1, cat_var2)
X-squared = 86.198, df = 5, p-value < 2.2e-16
```

[1] "major\_mode and rank\_group"



	1-10	11-20	21-30	31-40	Unknown
FALSE	1010	961	982	955	0
TRUE	1198	1249	1227	1253	0

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

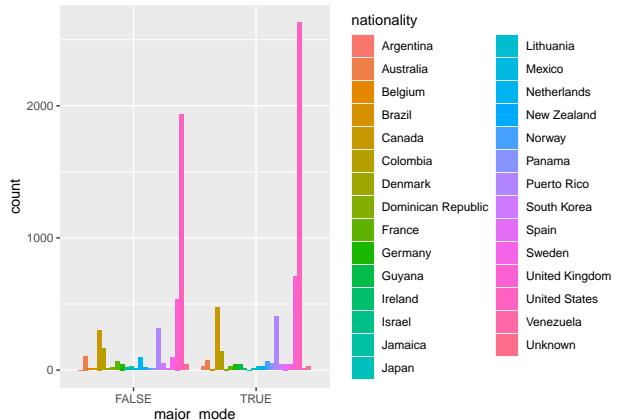


[1] "Chi-square test for major\_mode and rank\_group"

Pearson's Chi-squared test

```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 4, p-value = NA
```

[1] "major\_mode and nationality"



	Argentina	Australia	Belgium	Brazil	Canada	Colombia	Denmark	Dominican Republic	France	Germany	Guyana	Ireland	Israel	Jamaica	Japan	Lithuania	Mexico	Netherlands	New Zealand	Norway	Panama	Puerto Rico	South Korea	Spain	Sweden	United Kingdom	United States	Venezuela	Unknown
FALSE	1	106	15	15	303	162	13																						
TRUE	26	71	0	8	472	139	0																						

	Dominican Republic	France	Germany	Guyana	Ireland	Israel	Jamaica	Japan
FALSE	18	62	46	0	0	19	25	0
TRUE	8	28	40	43	14	0	1	9

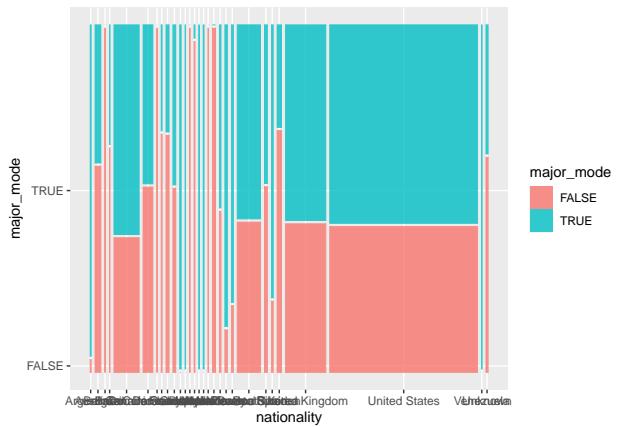
  

	Lithuania	Mexico	Netherlands	New Zealand	Norway	Panama	Puerto Rico
FALSE	0	13	94	22	9	12	312
TRUE	25	0	0	25	64	50	403

	South Korea	Spain	Sweden	United Kingdom	United States	Venezuela	Unknown
FALSE	48	12	92	538	1931	0	40
TRUE	41	46	39	709	2629	13	24

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

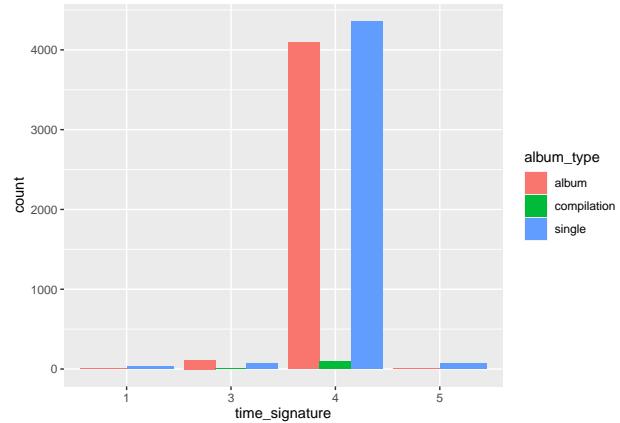


[1] "Chi-square test for major\_mode and nationality"

Pearson's Chi-squared test

```
data: table(cat_var1, cat_var2)
X-squared = 510.05, df = 28, p-value < 2.2e-16
```

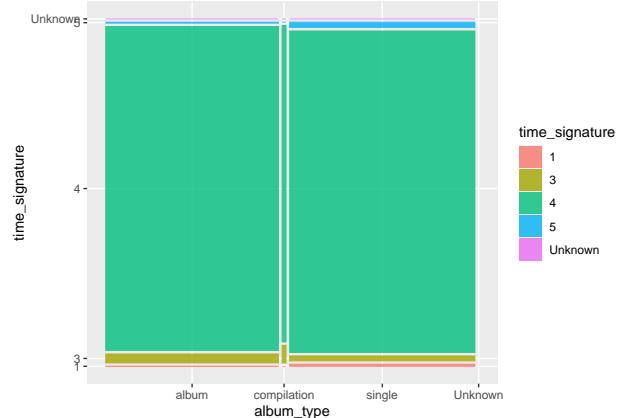
```
[1] "time_signature and album_type"
```



```
album compilation single Unknown
```

1	1	0	29	0
3	113	5	67	0
4	4092	89	4354	0
5	11	0	74	0
Unknown	0	0	0	0

```
Warning in chisq.test(table(cat_var1, cat_var2), correct = FALSE): Chi-squared approximation may be incorrect
```

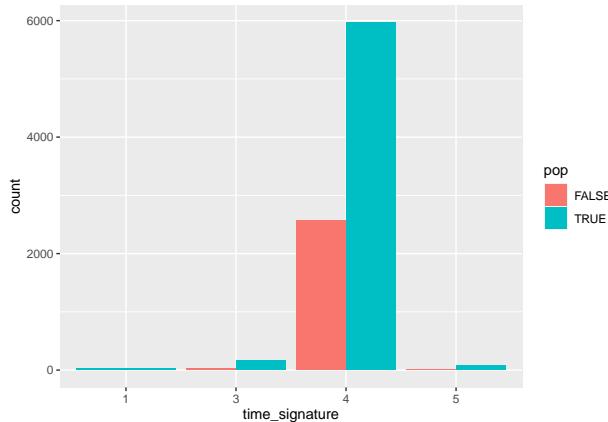


```
[1] "Chi-square test for time_signature and album_type"
```

Pearson's Chi-squared test

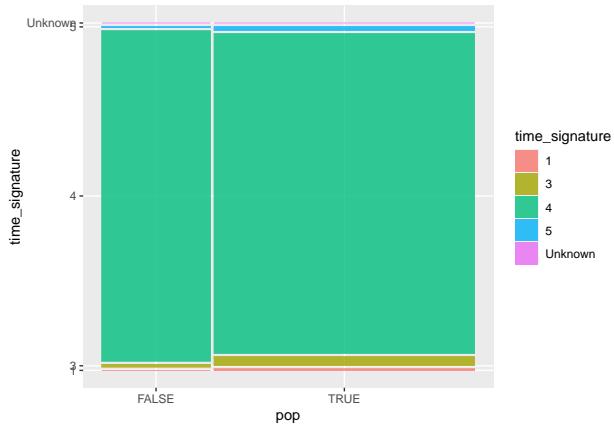
```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 12, p-value = NA
```

```
[1] "time_signature and pop"
```



	FALSE	TRUE
1	0	30
3	20	165
4	2570	5965
5	9	76
Unknown	0	0

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

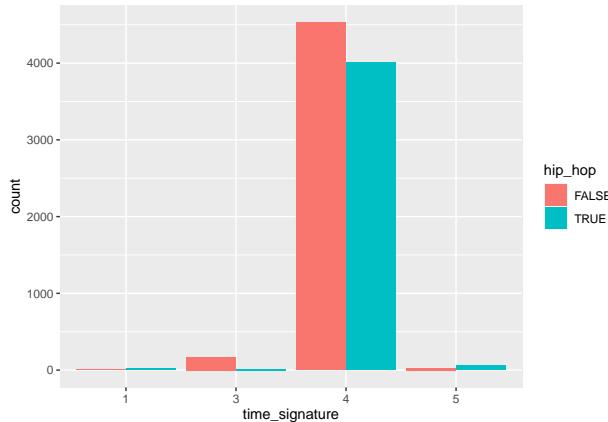


[1] "Chi-square test for time\_signature and pop"

Pearson's Chi-squared test

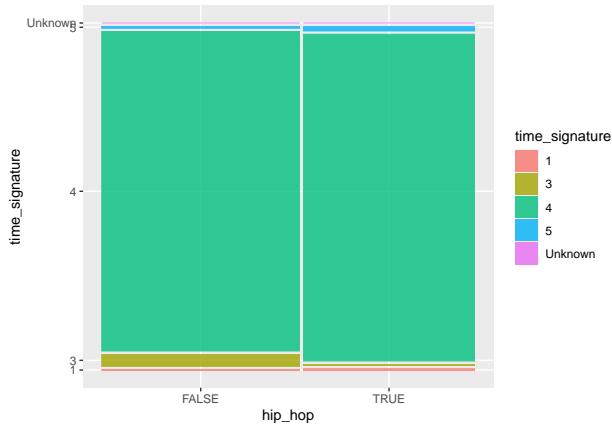
```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 4, p-value = NA
```

[1] "time\_signature and hip\_hop"



	FALSE	TRUE
1	~10	~20
3	~171	~14
4	~4527	~4008
5	~28	~57
Unknown	0	0

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

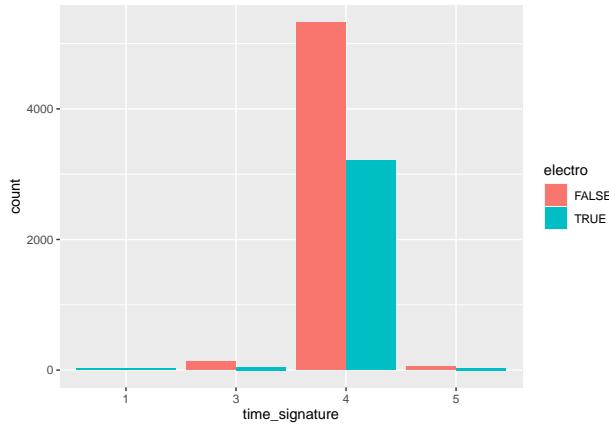


```
[1] "Chi-square test for time_signature and hip_hop"
```

Pearson's Chi-squared test

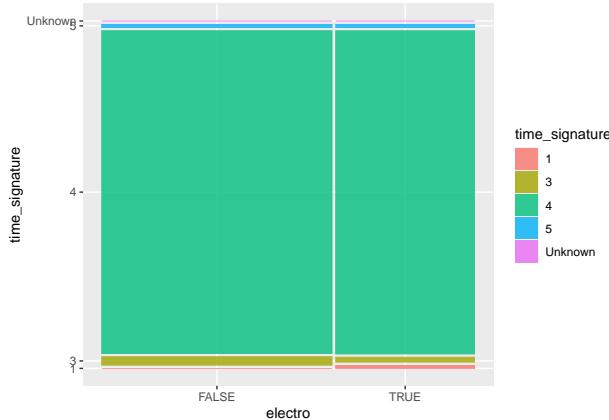
```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 4, p-value = NA
```

```
[1] "time_signature and electro"
```



	FALSE	TRUE
1	0	30
3	137	48
4	5321	3214
5	53	32
Unknown	0	0

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

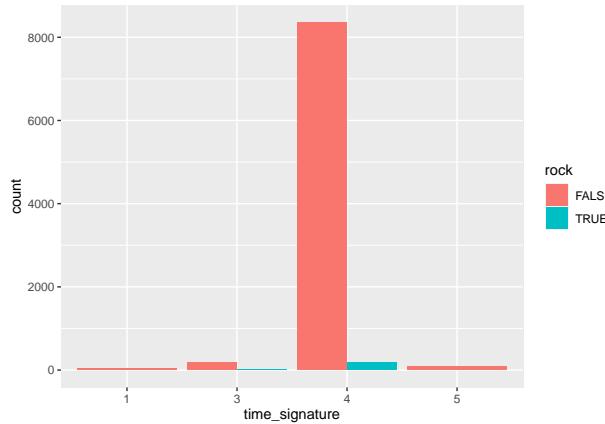


[1] "Chi-square test for time\_signature and electro"

Pearson's Chi-squared test

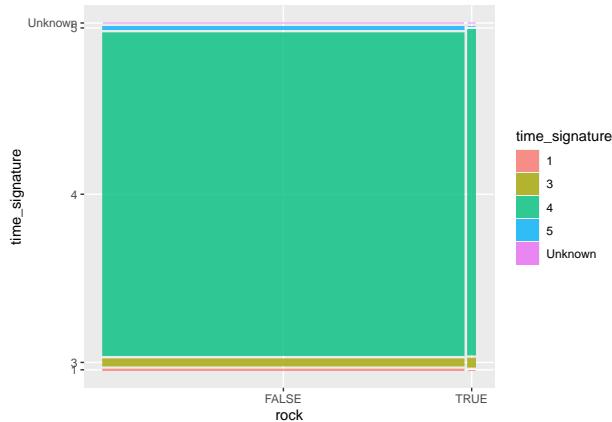
```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 4, p-value = NA
```

[1] "time\_signature and rock"



	FALSE	TRUE
1	30	0
3	180	5
4	8351	184
5	85	0
Unknown	0	0

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

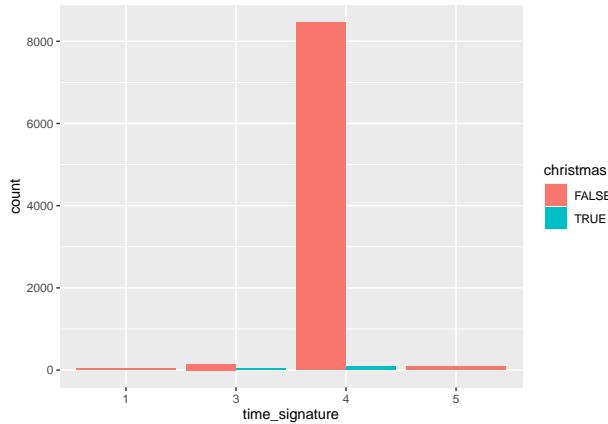


[1] "Chi-square test for time\_signature and rock"

Pearson's Chi-squared test

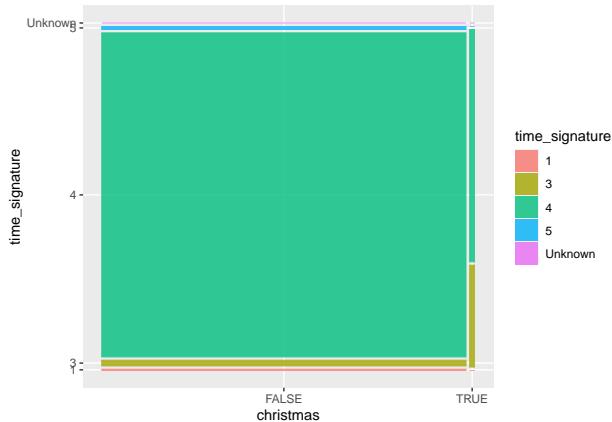
```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 4, p-value = NA
```

[1] "time\_signature and christmas"



	FALSE	TRUE
1	30	0
3	149	36
4	8453	82
5	85	0
Unknown	0	0

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

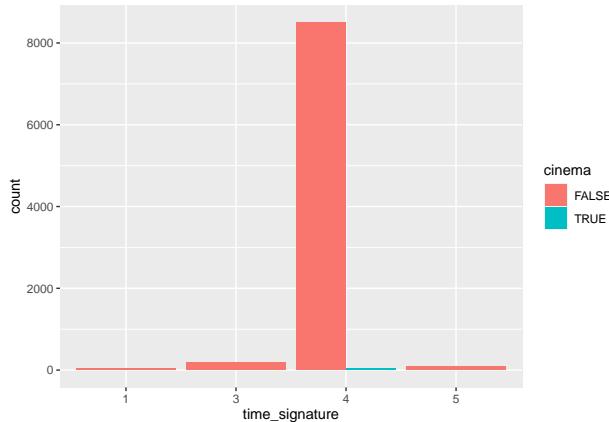


```
[1] "Chi-square test for time_signature and christmas"
```

Pearson's Chi-squared test

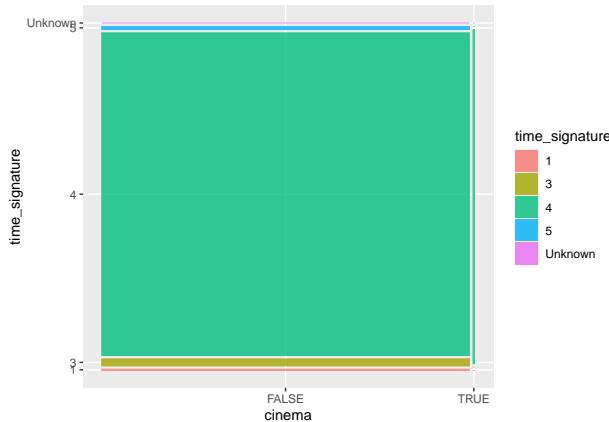
```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 4, p-value = NA
```

```
[1] "time_signature and cinema"
```



	FALSE	TRUE
1	30	0
3	185	0
4	8497	38
5	85	0
Unknown	0	0

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

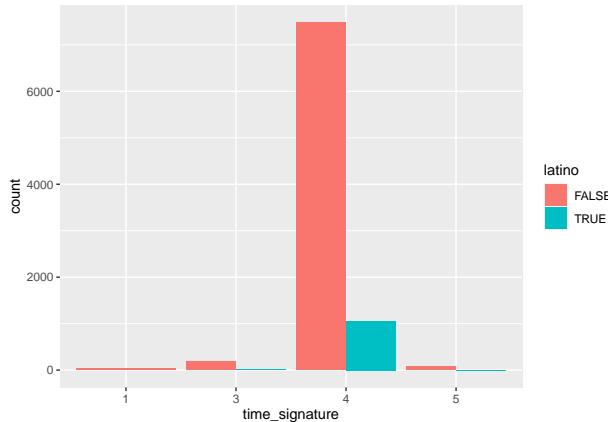


```
[1] "Chi-square test for time_signature and cinema"
```

Pearson's Chi-squared test

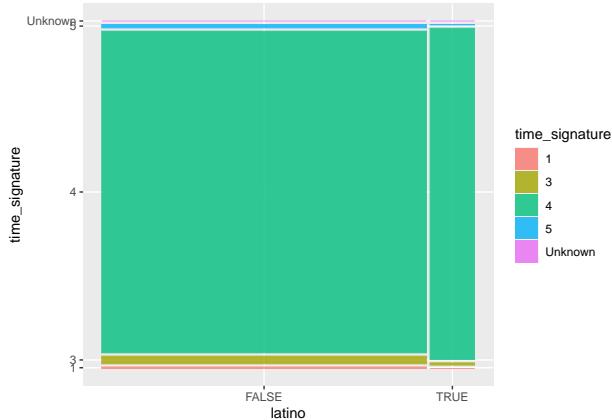
```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 4, p-value = NA
```

```
[1] "time_signature and latino"
```



	FALSE	TRUE
1	30	0
3	178	7
4	7478	1057
5	83	2
Unknown	0	0

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

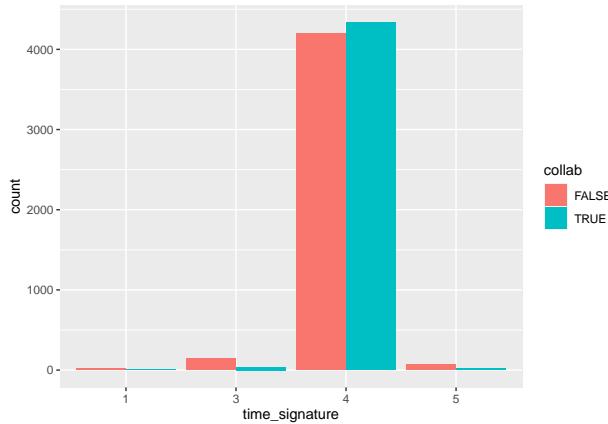


[1] "Chi-square test for time\_signature and latino"

Pearson's Chi-squared test

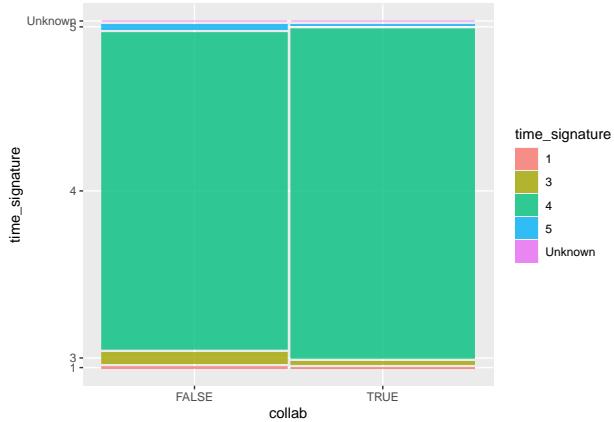
```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 4, p-value = NA
```

[1] "time\_signature and collab"



	FALSE	TRUE
1	21	9
3	147	38
4	4202	4333
5	68	17
Unknown	0	0

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

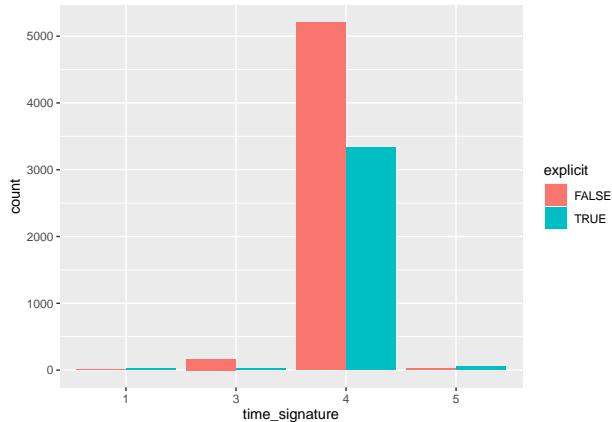


[1] "Chi-square test for time\_signature and collab"

Pearson's Chi-squared test

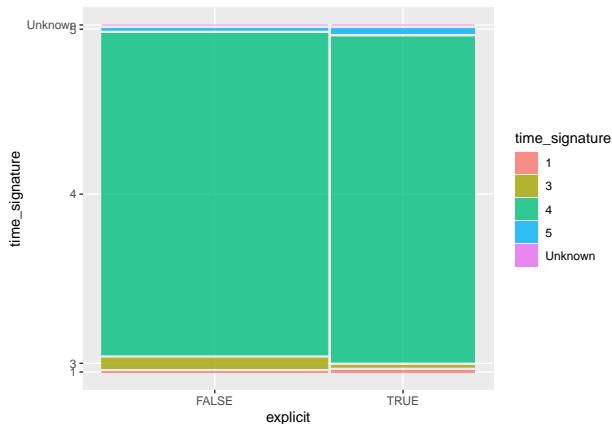
```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 4, p-value = NA
```

[1] "time\_signature and explicit"



	FALSE	TRUE
1	10	20
3	167	18
4	5202	3333
5	30	55
Unknown	0	0

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

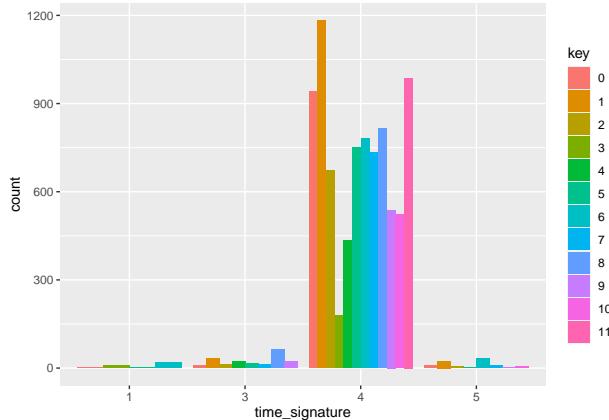


[1] "Chi-square test for time\_signature and explicit"

Pearson's Chi-squared test

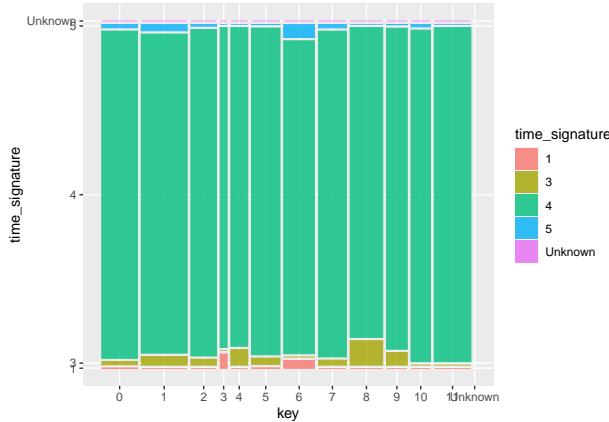
```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 4, p-value = NA
```

[1] "time\_signature and key"



	0	1	2	3	4	5	6	7	8	9	10	11	Unknown
1	1	0	0	8	0	1	20	0	0	0	0	0	0
3	9	32	12	0	21	15	0	11	64	21	0	0	0
4	941	1182	673	178	434	751	781	734	814	538	522	987	0
5	10	24	4	0	0	1	33	8	0	1	4	0	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0	0

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

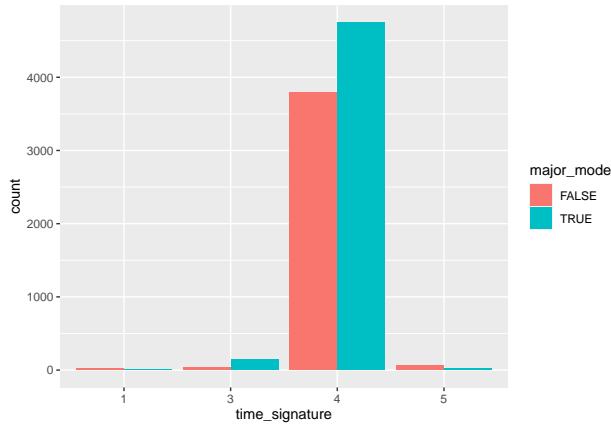


[1] "Chi-square test for time\_signature and key"

Pearson's Chi-squared test

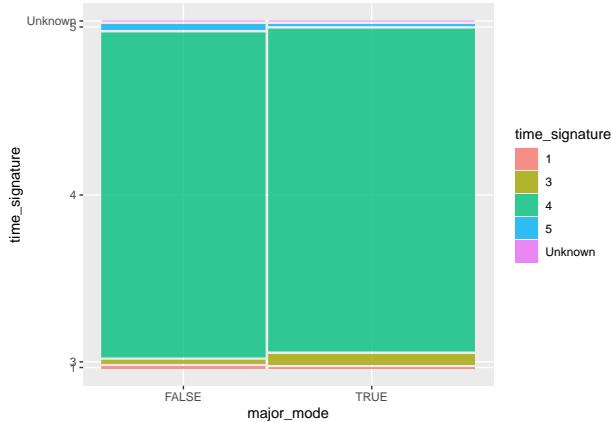
```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 48, p-value = NA
```

[1] "time\_signature and major\_mode"



	FALSE	TRUE
1	20	10
3	36	149
4	3789	4746
5	63	22
Unknown	0	0

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

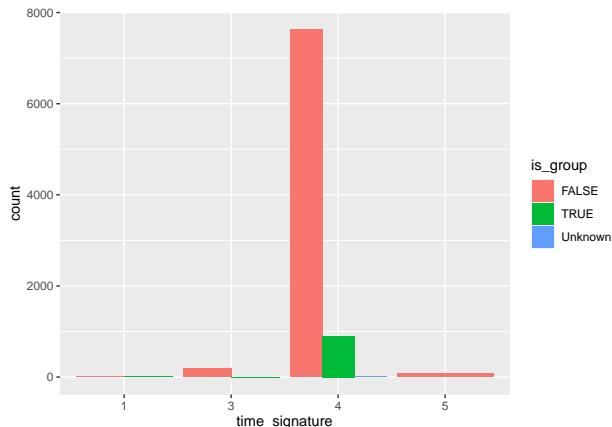


[1] "Chi-square test for time\_signature and major\_mode"

Pearson's Chi-squared test

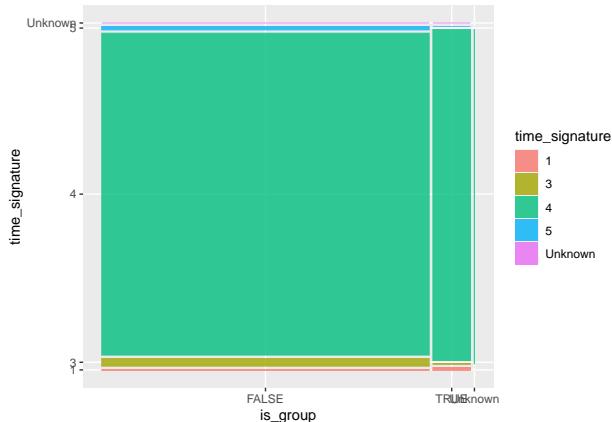
```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 4, p-value = NA
```

[1] "time\_signature and is\_group"



	FALSE	TRUE	Unknown
1	22	8	0
3	184	1	0
4	7625	901	9
5	85	0	0
Unknown	0	0	0

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

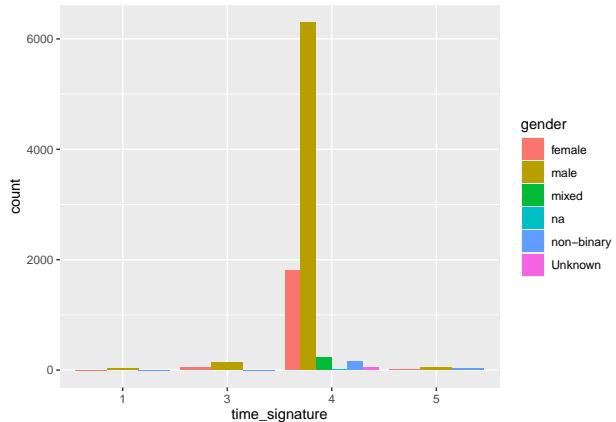


[1] "Chi-square test for time\_signature and is\_group"

Pearson's Chi-squared test

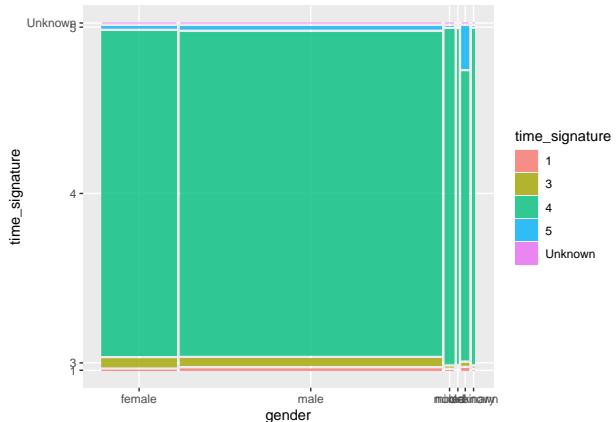
```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 8, p-value = NA
```

[1] "time\_signature and gender"



	female	male	mixed	na	non-binary	Unknown
1	1	28	0	0	1	0
3	45	139	0	0	1	0
4	1807	6294	222	8	150	54
5	10	53	0	0	22	0
Unknown	0	0	0	0	0	0

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

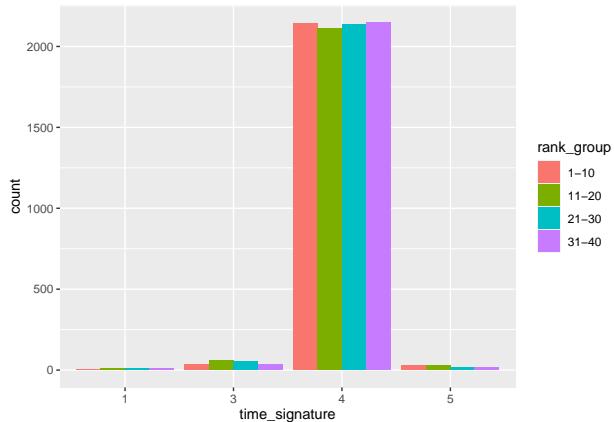


[1] "Chi-square test for time\_signature and gender"

Pearson's Chi-squared test

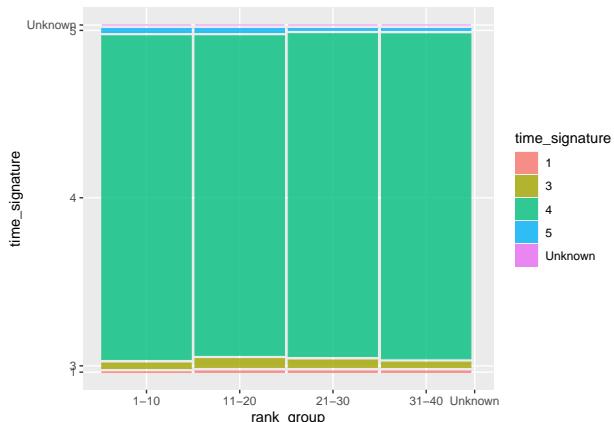
```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 20, p-value = NA
```

[1] "time\_signature and rank\_group"



	1-10	11-20	21-30	31-40	Unknown
1	3	9	9	9	0
3	37	60	51	37	0
4	2140	2113	2135	2147	0
5	28	28	14	15	0
Unknown	0	0	0	0	0

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

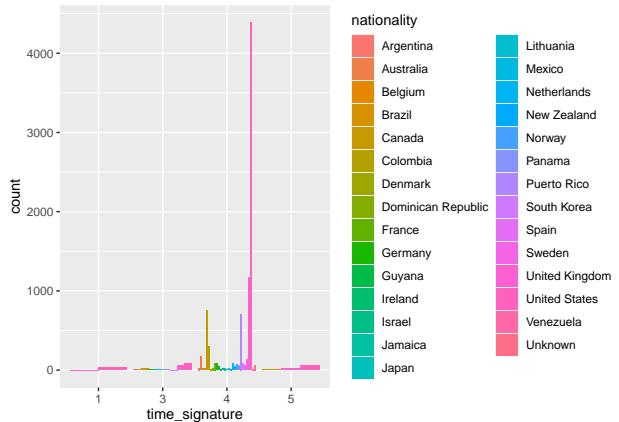


```
[1] "Chi-square test for time_signature and rank_group"
```

Pearson's Chi-squared test

```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 16, p-value = NA
```

```
[1] "time_signature and nationality"
```



	Argentina	Australia	Belgium	Brazil	Canada	Colombia	Denmark
1	0	0	0	0	0	0	0
3	0	5	0	0	24	0	0
4	27	172	15	23	751	299	13
5	0	0	0	0	0	2	0
Unknown	0	0	0	0	0	0	0

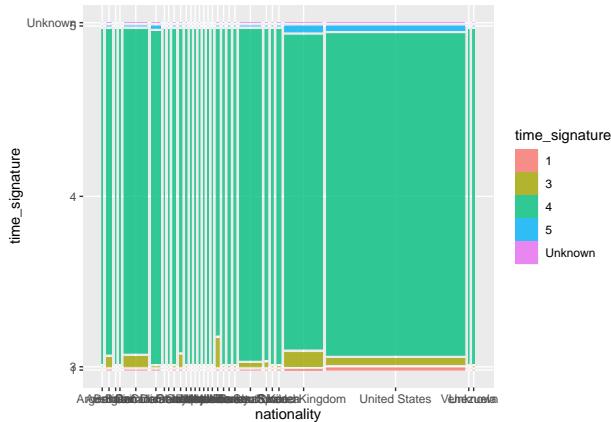
	Dominican Republic	France	Germany	Guyana	Ireland	Israel	Jamaica	Japan
1	0	0	0	0	0	0	0	0
3	0	0	3	0	0	0	0	0
4	26	90	83	43	14	19	26	9
5	0	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0	0

	Lithuania	Mexico	Netherlands	New Zealand	Norway	Panama	Puerto Rico
1	0	0	0	0	0	0	0
3	0	0	8	0	0	0	7
4	25	13	86	47	73	62	708
5	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0

	South Korea	Spain	Sweden	United Kingdom	United States	Venezuela
1	0	0	0	1	29	0
3	1	0	0	53	84	0
4	88	58	131	1171	4386	13
5	0	0	0	22	61	0
Unknown	0	0	0	0	0	0

	Unknown
1	0
3	0
4	64
5	0
Unknown	0

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

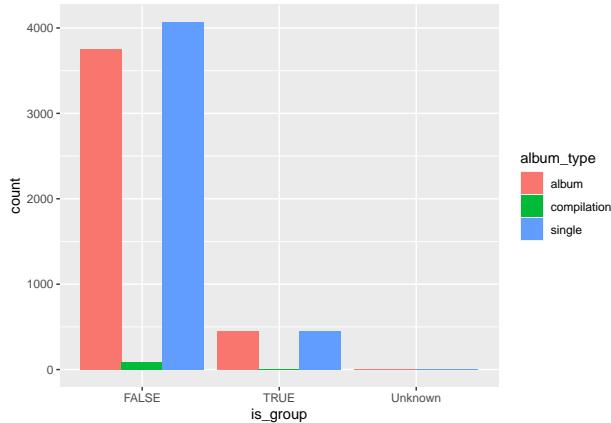


```
[1] "Chi-square test for time_signature and nationality"
```

Pearson's Chi-squared test

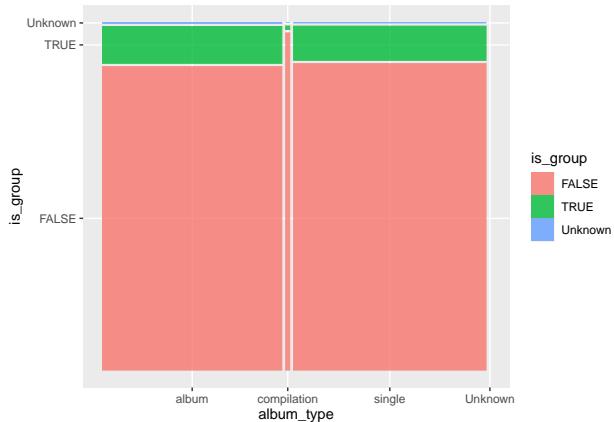
```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 112, p-value = NA
```

```
[1] "is_group and album_type"
```



	album	compilation	single	Unknown
FALSE	3755	93	4068	0
TRUE	455	1	454	0
Unknown	7	0	2	0

```
Warning in chisq.test(table(cat_var1, cat_var2), correct = FALSE): Chi-squared approximation may be incorrect
```

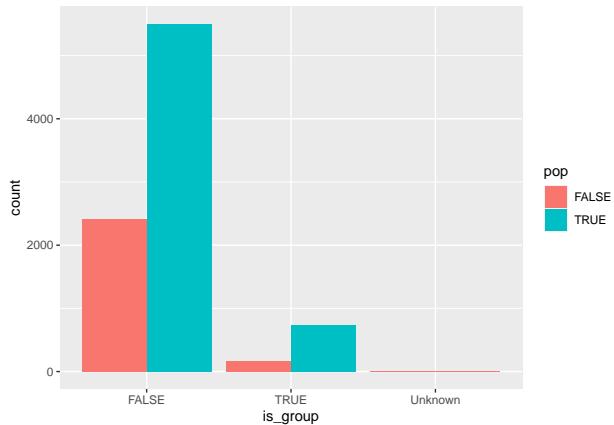


```
[1] "Chi-square test for is_group and album_type"
```

Pearson's Chi-squared test

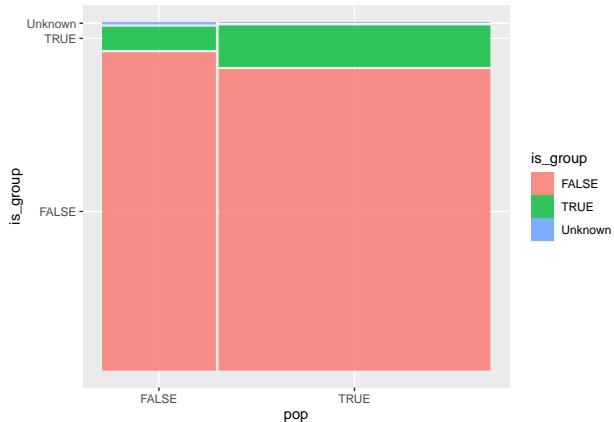
```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 6, p-value = NA
```

```
[1] "is_group and pop"
```



	FALSE	TRUE
FALSE	2419	5497
TRUE	171	739
Unknown	9	0

```
Warning in chisq.test(table(cat_var1, cat_var2), correct = FALSE): Chi-squared approximation may be incorrect
```

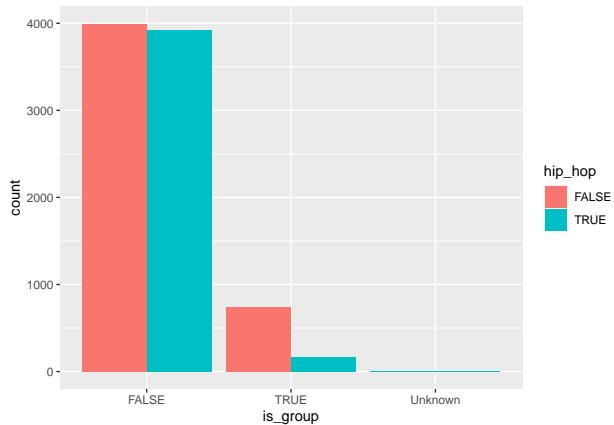


```
[1] "Chi-square test for is_group and pop"
```

Pearson's Chi-squared test

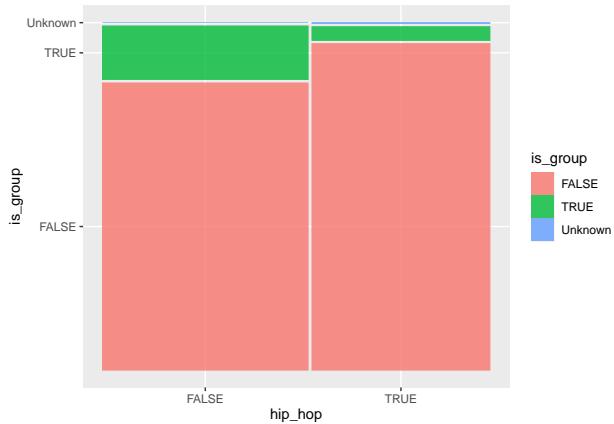
```
data: table(cat_var1, cat_var2)
X-squared = 76.045, df = 2, p-value < 2.2e-16
```

```
[1] "is_group and hip_hop"
```



	FALSE	TRUE
FALSE	3990	3926
TRUE	746	164
Unknown	0	9

```
Warning in chisq.test(table(cat_var1, cat_var2), correct = FALSE): Chi-squared approximation may be incorrect
```

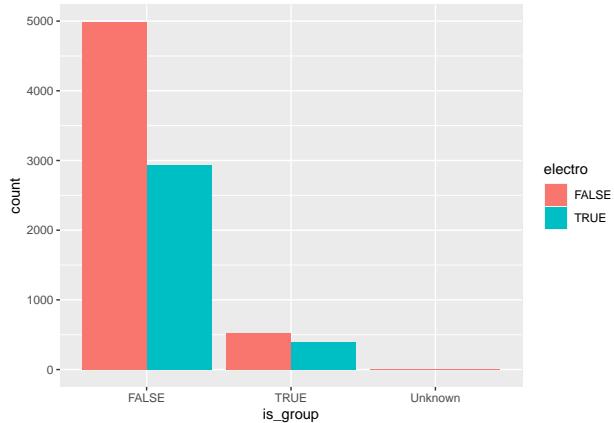


```
[1] "Chi-square test for is_group and hip_hop"
```

Pearson's Chi-squared test

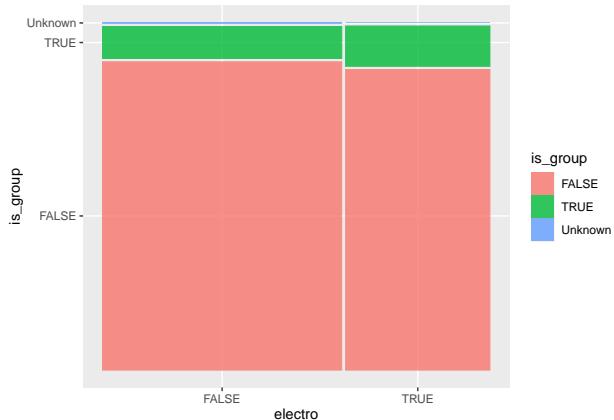
```
data: table(cat_var1, cat_var2)
X-squared = 337.57, df = 2, p-value < 2.2e-16
```

```
[1] "is_group and electro"
```



	FALSE	TRUE
FALSE	4985	2931
TRUE	517	393
Unknown	9	0

```
Warning in chisq.test(table(cat_var1, cat_var2), correct = FALSE): Chi-squared approximation may be incorrect
```

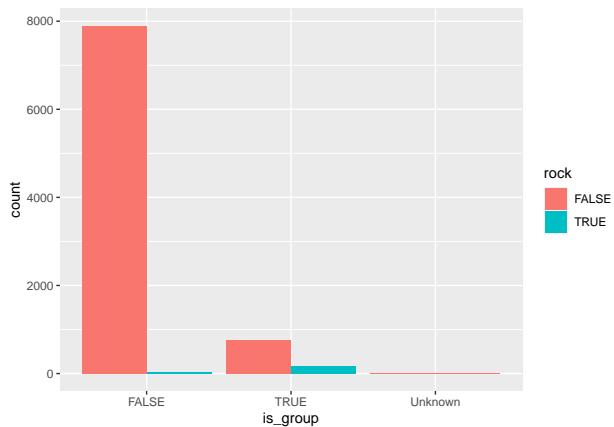


```
[1] "Chi-square test for is_group and electro"
```

Pearson's Chi-squared test

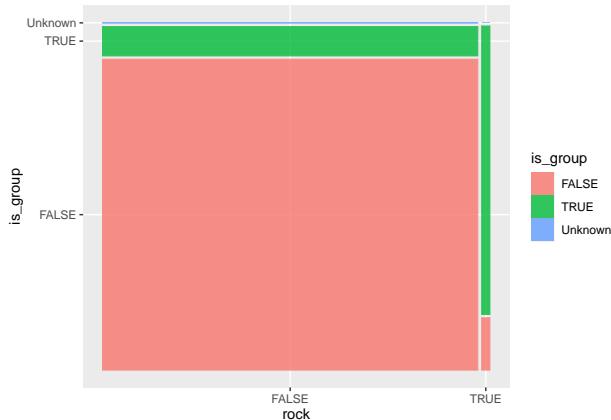
```
data: table(cat_var1, cat_var2)
X-squared = 18.633, df = 2, p-value = 8.993e-05
```

```
[1] "is_group and rock"
```



	FALSE	TRUE
FALSE	7887	29
TRUE	750	160
Unknown	9	0

```
Warning in chisq.test(table(cat_var1, cat_var2), correct = FALSE): Chi-squared approximation may be incorrect
```

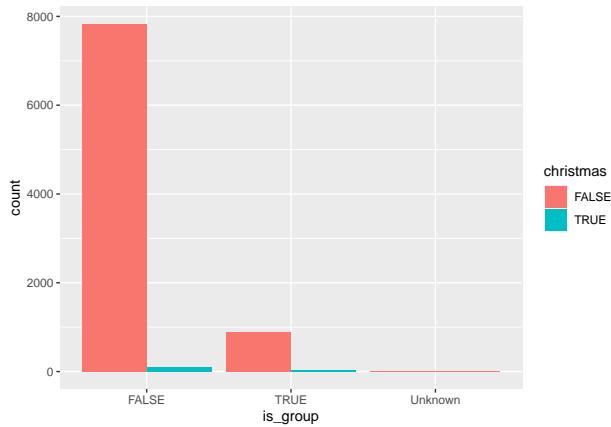


```
[1] "Chi-square test for is_group and rock"
```

Pearson's Chi-squared test

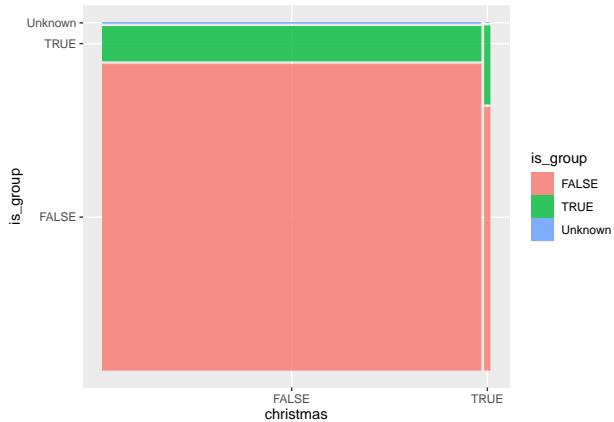
```
data: table(cat_var1, cat_var2)
X-squared = 1155.7, df = 2, p-value < 2.2e-16
```

```
[1] "is_group and christmas"
```



	FALSE	TRUE
FALSE	7825	91
TRUE	883	27
Unknown	9	0

```
Warning in chisq.test(table(cat_var1, cat_var2), correct = FALSE): Chi-squared approximation may be incorrect
```

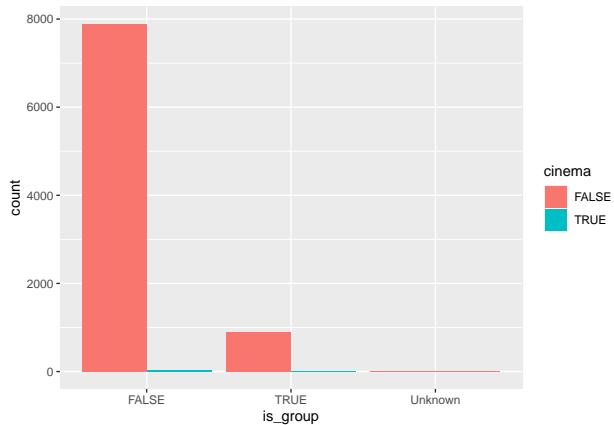


```
[1] "Chi-square test for is_group and christmas"
```

Pearson's Chi-squared test

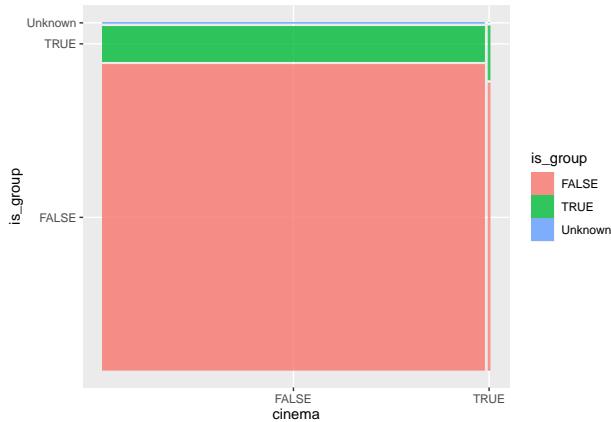
```
data: table(cat_var1, cat_var2)
X-squared = 20.581, df = 2, p-value = 3.396e-05
```

```
[1] "is_group and cinema"
```



	FALSE	TRUE
FALSE	7884	32
TRUE	904	6
Unknown	9	0

```
Warning in chisq.test(table(cat_var1, cat_var2), correct = FALSE): Chi-squared approximation may be incorrect
```

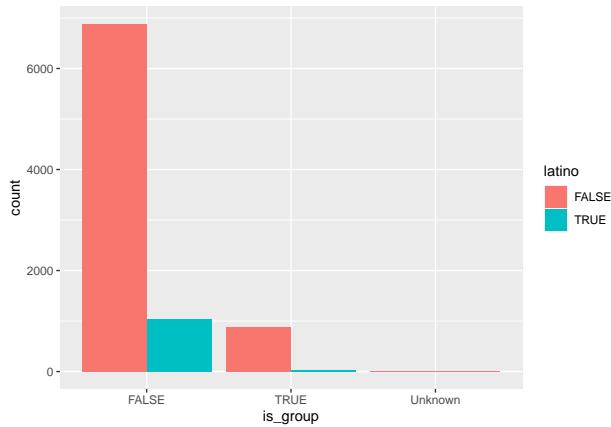


```
[1] "Chi-square test for is_group and cinema"
```

Pearson's Chi-squared test

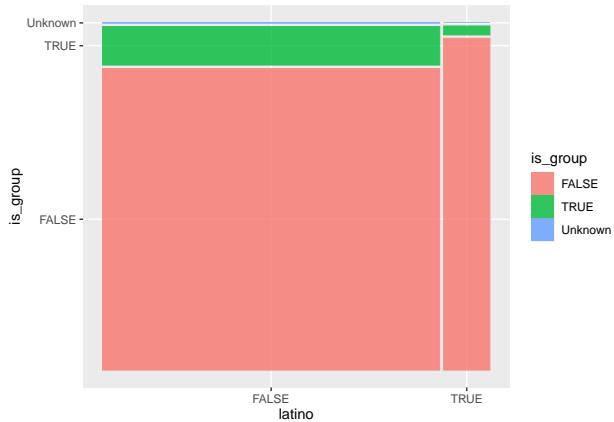
```
data: table(cat_var1, cat_var2)
X-squared = 1.2791, df = 2, p-value = 0.5275
```

```
[1] "is_group and latino"
```



	FALSE	TRUE
FALSE	6878	1038
TRUE	882	28
Unknown	9	0

```
Warning in chisq.test(table(cat_var1, cat_var2), correct = FALSE): Chi-squared approximation may be incorrect
```

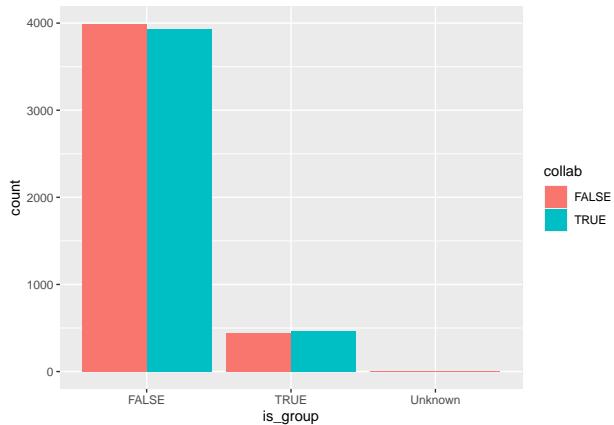


```
[1] "Chi-square test for is_group and latino"
```

Pearson's Chi-squared test

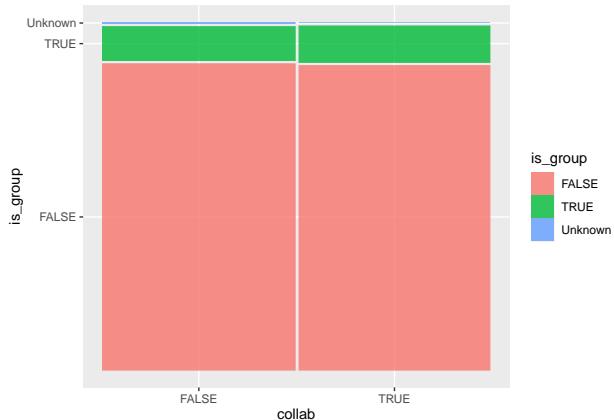
```
data: table(cat_var1, cat_var2)
X-squared = 78.713, df = 2, p-value < 2.2e-16
```

```
[1] "is_group and collab"
```



	FALSE	TRUE
FALSE	3988	3928
TRUE	441	469
Unknown	9	0

```
Warning in chisq.test(table(cat_var1, cat_var2), correct = FALSE): Chi-squared approximation may be incorrect
```

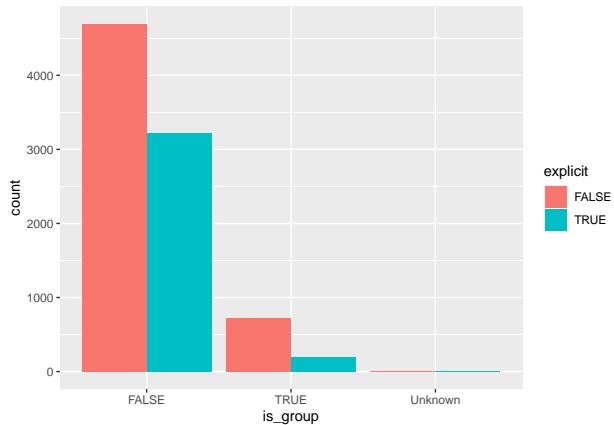


```
[1] "Chi-square test for is_group and collab"
```

Pearson's Chi-squared test

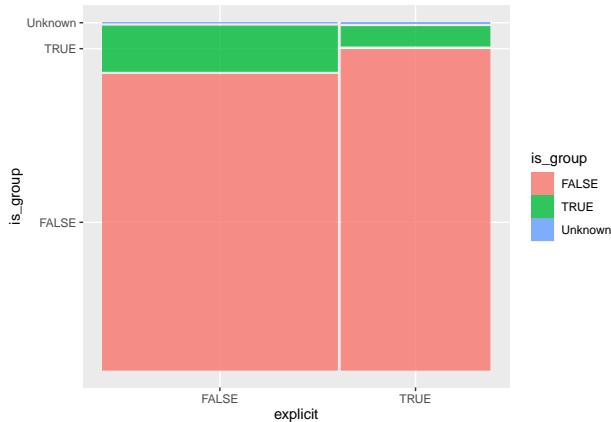
```
data: table(cat_var1, cat_var2)
X-squared = 10.126, df = 2, p-value = 0.006326
```

```
[1] "is_group and explicit"
```



	FALSE	TRUE
FALSE	4691	3225
TRUE	716	194
Unknown	2	7

```
Warning in chisq.test(table(cat_var1, cat_var2), correct = FALSE): Chi-squared approximation may be incorrect
```

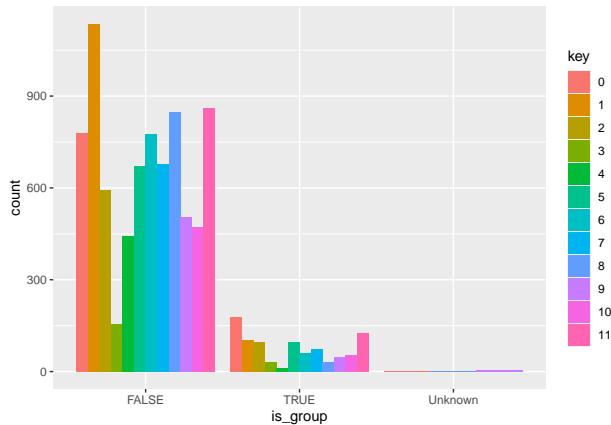


```
[1] "Chi-square test for is_group and explicit"
```

Pearson's Chi-squared test

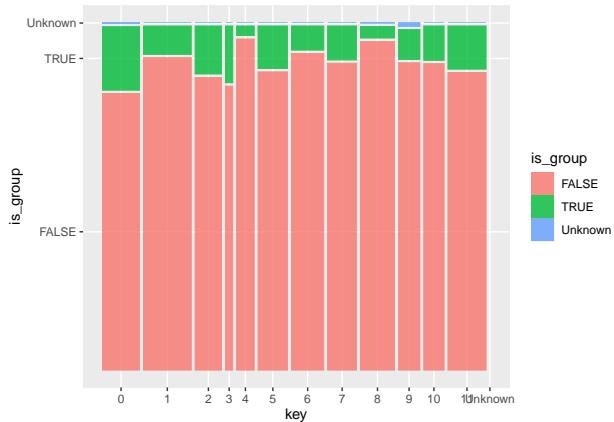
```
data: table(cat_var1, cat_var2)
X-squared = 135.45, df = 2, p-value < 2.2e-16
```

```
[1] "is_group and key"
```



	0	1	2	3	4	5	6	7	8	9	10	11	Unknown
FALSE	780	1135	592	155	442	672	775	678	847	505	473	862	0
TRUE	179	103	97	31	13	96	59	75	30	49	53	125	0
Unknown	2	0	0	0	0	0	0	0	1	6	0	0	0

```
Warning in chisq.test(table(cat_var1, cat_var2), correct = FALSE): Chi-squared approximation may be incorrect
```

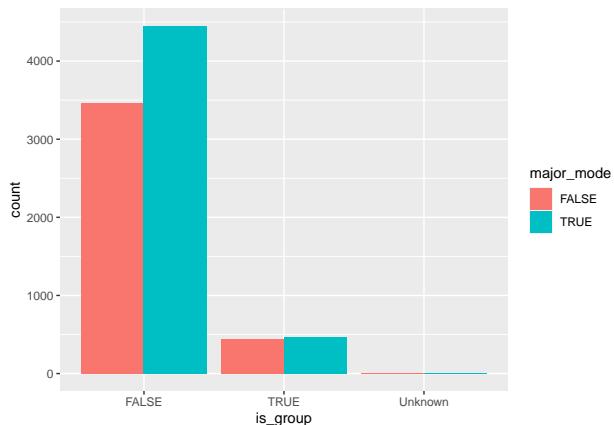


```
[1] "Chi-square test for is_group and key"
```

Pearson's Chi-squared test

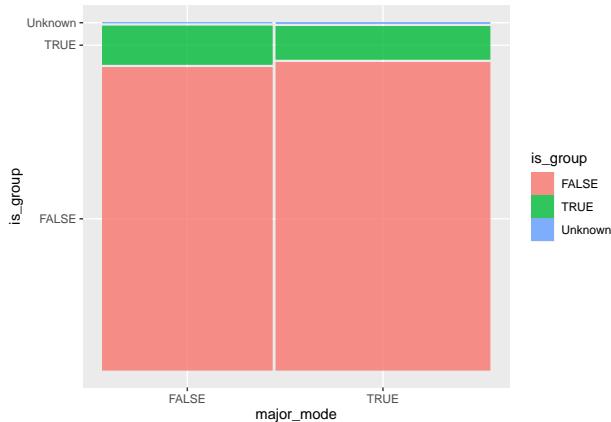
```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 24, p-value = NA
```

```
[1] "is_group and major_mode"
```



	FALSE	TRUE
FALSE	3469	4447
TRUE	438	472
Unknown	1	8

```
Warning in chisq.test(table(cat_var1, cat_var2), correct = FALSE): Chi-squared approximation may be incorrect
```

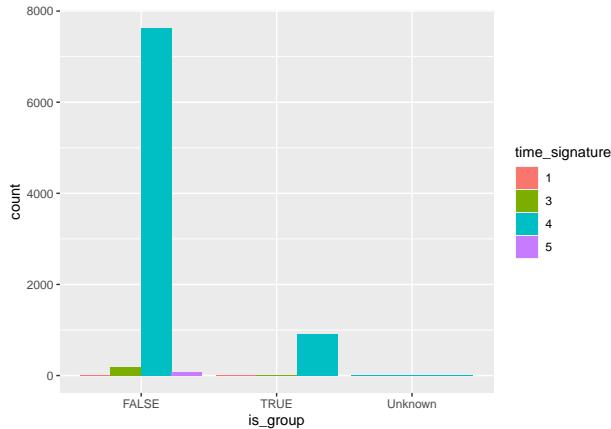


```
[1] "Chi-square test for is_group and major_mode"
```

Pearson's Chi-squared test

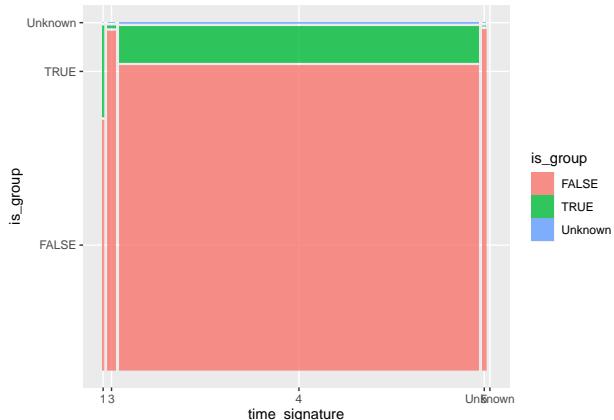
```
data: table(cat_var1, cat_var2)
X-squared = 10.151, df = 2, p-value = 0.006248
```

```
[1] "is_group and time_signature"
```



	1	3	4	5	Unknown
FALSE	22	184	7625	85	0
TRUE	8	1	901	0	0
Unknown	0	0	9	0	0

```
Warning in chisq.test(table(cat_var1, cat_var2), correct = FALSE): Chi-squared approximation may be incorrect
```

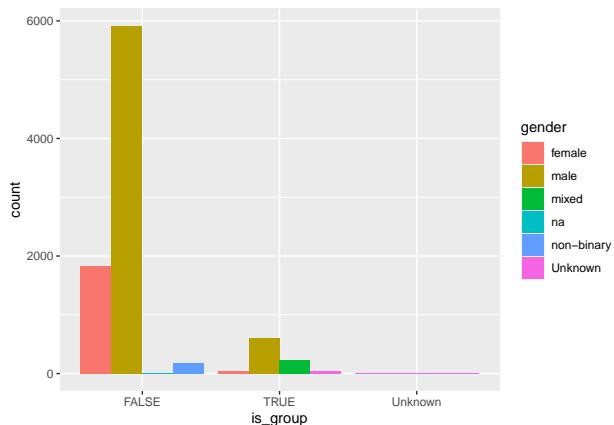


```
[1] "Chi-square test for is_group and time_signature"
```

Pearson's Chi-squared test

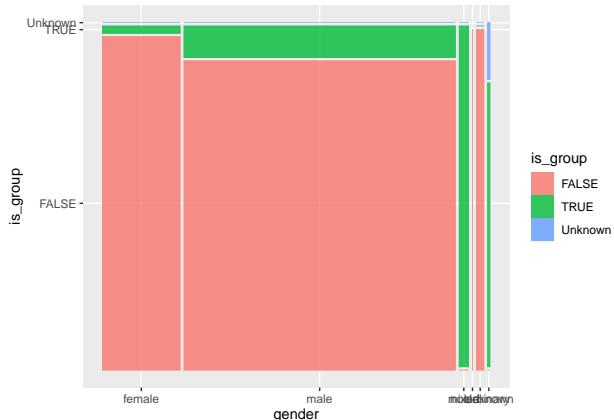
```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 8, p-value = NA
```

```
[1] "is_group and gender"
```



	female	male	mixed	na	non-binary	Unknown
FALSE	1823	5911	0	8	174	0
TRUE	40	603	222	0	0	45
Unknown	0	0	0	0	0	9

```
Warning in chisq.test(table(cat_var1, cat_var2), correct = FALSE): Chi-squared approximation may be incorrect
```

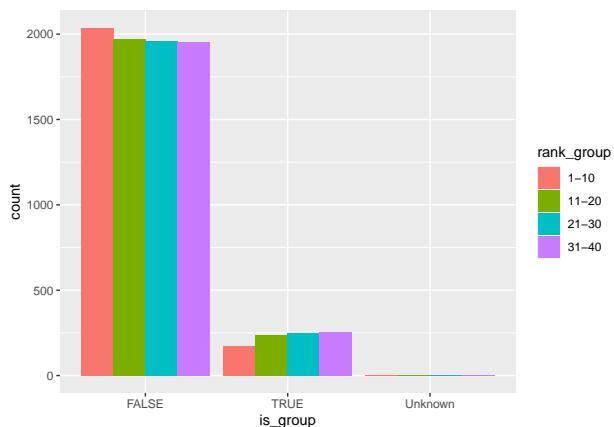


```
[1] "Chi-square test for is_group and gender"
```

Pearson's Chi-squared test

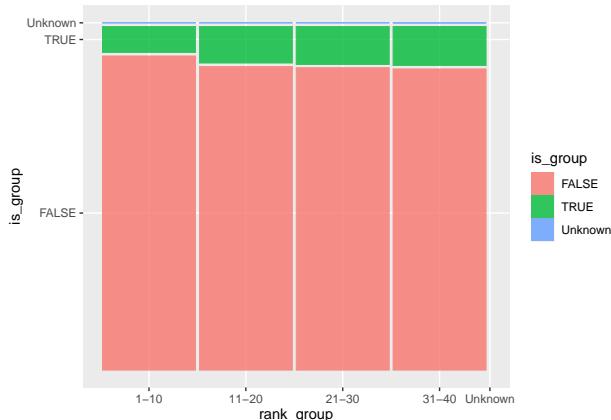
```
data: table(cat_var1, cat_var2)
X-squared = 3887.8, df = 10, p-value < 2.2e-16
```

```
[1] "is_group and rank_group"
```



	1-10	11-20	21-30	31-40	Unknown
FALSE	2035	1970	1960	1951	0
TRUE	171	238	247	254	0
Unknown	2	2	2	3	0

```
Warning in chisq.test(table(cat_var1, cat_var2), correct = FALSE): Chi-squared approximation may be incorrect
```

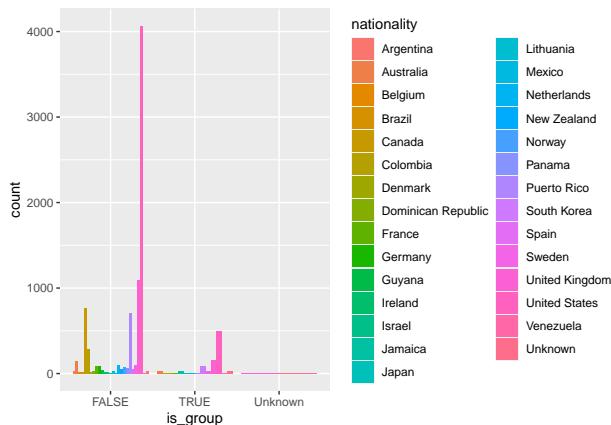


```
[1] "Chi-square test for is_group and rank_group"
```

Pearson's Chi-squared test

```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 8, p-value = NA
```

```
[1] "is_group and nationality"
```



	Argentina	Australia	Belgium	Brazil	Canada	Colombia	Denmark
FALSE	27	149	15	23	764	291	13
TRUE	0	28	0	0	11	10	0
Unknown	0	0	0	0	0	0	0

	Dominican Republic	France	Germany	Guyana	Ireland	Israel	Jamaica	Japan
FALSE	26	89	86	43	14	19	1	0
TRUE	0	1	0	0	0	0	25	9
Unknown	0	0	0	0	0	0	0	0

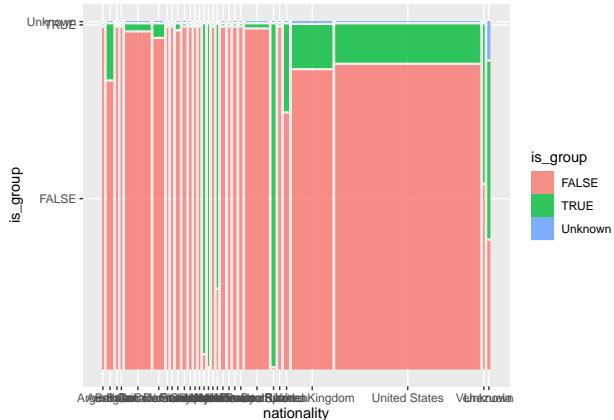
	Lithuania	Mexico	Netherlands	New Zealand	Norway	Panama	Puerto Rico
FALSE	25	3	94	47	73	62	711
TRUE	0	10	0	0	0	0	4
Unknown	0	0	0	0	0	0	0

South Korea Spain Sweden United Kingdom United States Venezuela

FALSE	0	58	98	1091	4063	7
TRUE	89	0	33	154	497	6
Unknown	0	0	0	2	0	0

Unknown	
FALSE	24
TRUE	33
Unknown	7

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

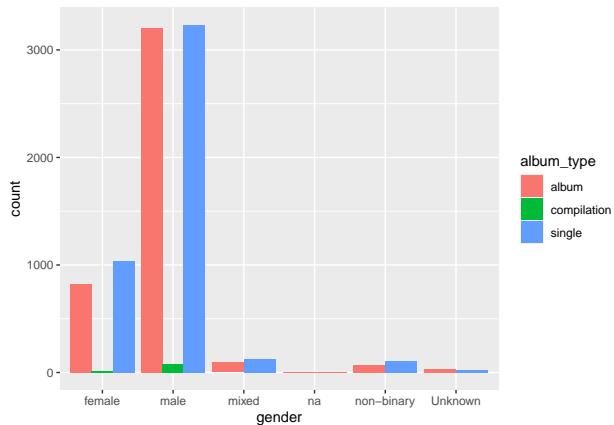


[1] "Chi-square test for is\_group and nationality"

Pearson's Chi-squared test

```
data: table(cat_var1, cat_var2)
X-squared = 2292.8, df = 56, p-value < 2.2e-16
```

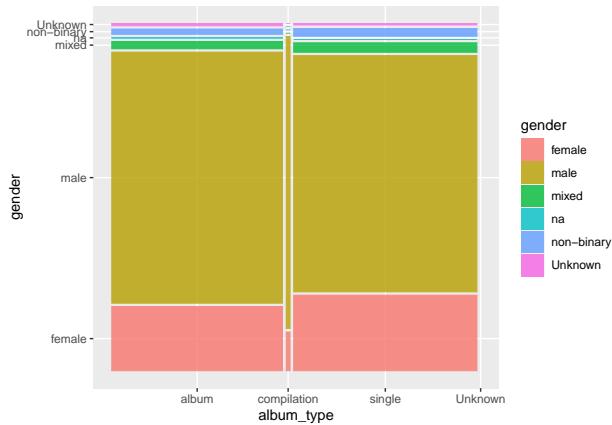
[1] "gender and album\_type"



	album	compilation	single	Unknown
female	819	11	1033	0
male	3200	83	3231	0
mixed	93	0	129	0
na	8	0	0	0

non-binary	66	0	108	0
Unknown	31	0	23	0

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

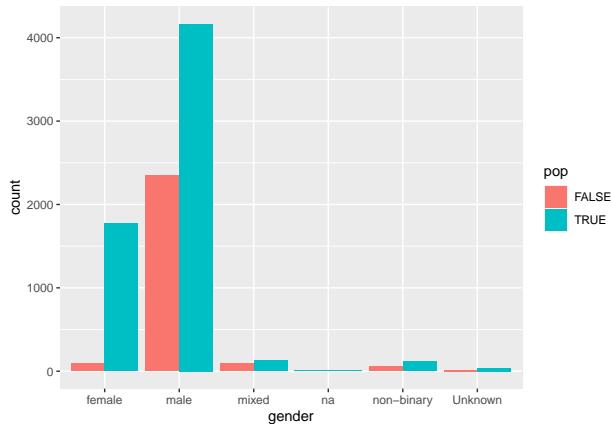


[1] "Chi-square test for gender and album\_type"

Pearson's Chi-squared test

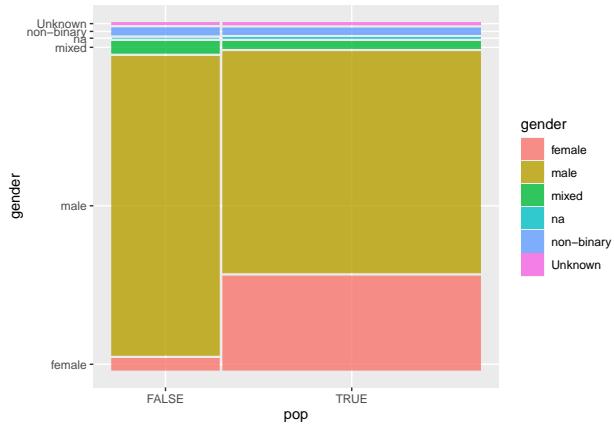
```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 15, p-value = NA
```

[1] "gender and pop"



	FALSE	TRUE
female	91	1772
male	2347	4167
mixed	91	131
na	0	8
non-binary	55	119
Unknown	15	39

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

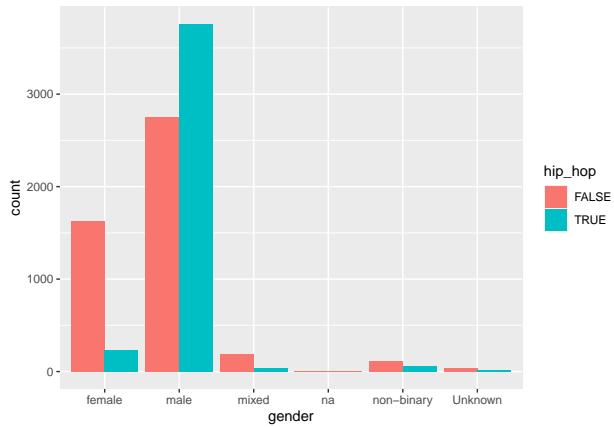


```
[1] "Chi-square test for gender and pop"
```

Pearson's Chi-squared test

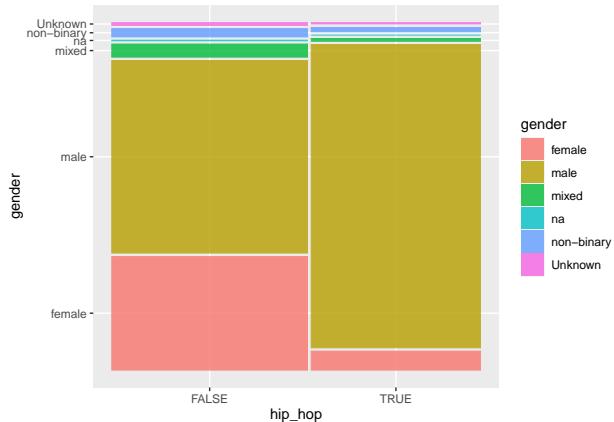
```
data: table(cat_var1, cat_var2)
X-squared = 695.33, df = 5, p-value < 2.2e-16
```

```
[1] "gender and hip_hop"
```



	FALSE	TRUE
female	1628	235
male	2757	3757
mixed	187	35
na	8	0
non-binary	118	56
Unknown	38	16

```
Warning in chisq.test(table(cat_var1, cat_var2), correct = FALSE): Chi-squared approximation may be incorrect
```

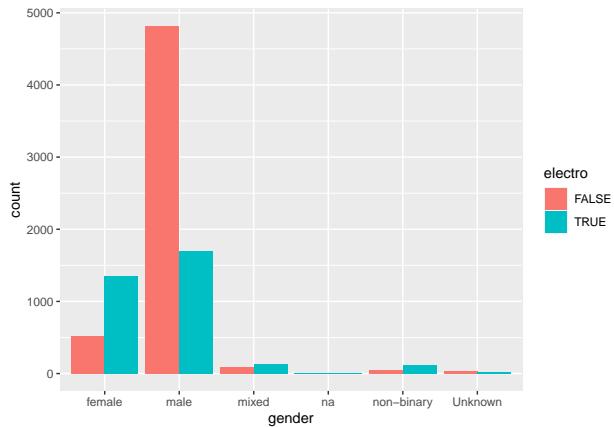


```
[1] "Chi-square test for gender and hip_hop"
```

Pearson's Chi-squared test

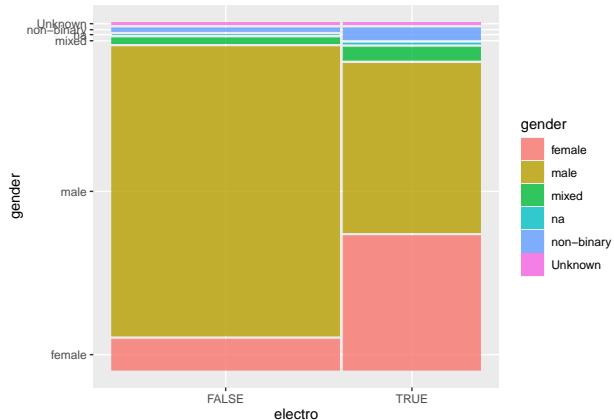
```
data: table(cat_var1, cat_var2)
X-squared = 1299, df = 5, p-value < 2.2e-16
```

```
[1] "gender and electro"
```



	FALSE	TRUE
female	514	1349
male	4815	1699
mixed	93	129
na	0	8
non-binary	55	119
Unknown	34	20

```
Warning in chisq.test(table(cat_var1, cat_var2), correct = FALSE): Chi-squared approximation may be incorrect
```

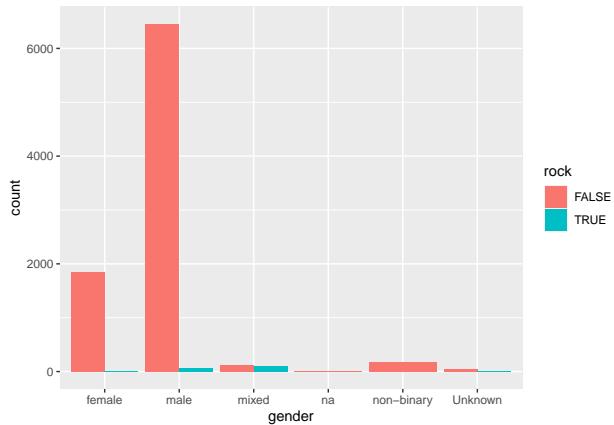


[1] "Chi-square test for gender and electro"

Pearson's Chi-squared test

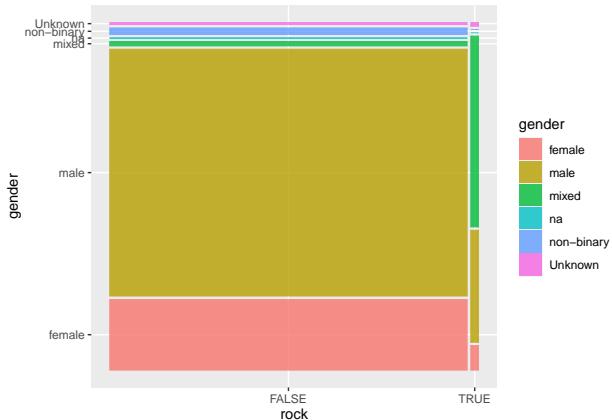
```
data: table(cat_var1, cat_var2)
X-squared = 1453.5, df = 5, p-value < 2.2e-16
```

[1] "gender and rock"



	FALSE	TRUE
female	1849	14
male	6450	64
mixed	113	109
na	8	0
non-binary	174	0
Unknown	52	2

```
Warning in chisq.test(table(cat_var1, cat_var2), correct = FALSE): Chi-squared approximation may be incorrect
```

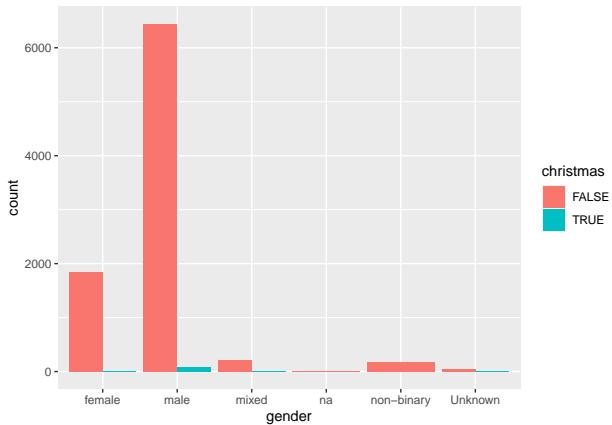


```
[1] "Chi-square test for gender and rock"
```

Pearson's Chi-squared test

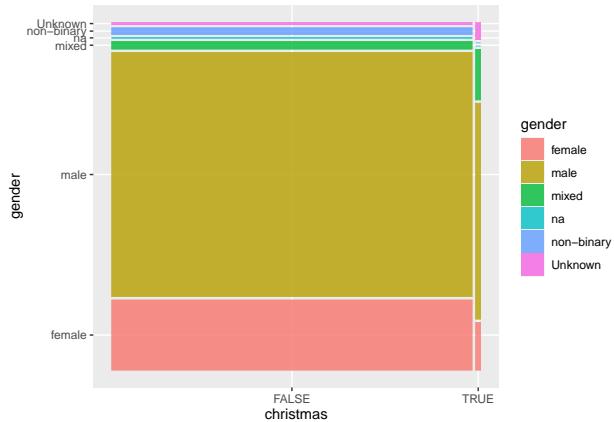
```
data: table(cat_var1, cat_var2)
X-squared = 2401.9, df = 5, p-value < 2.2e-16
```

```
[1] "gender and christmas"
```



	FALSE	TRUE
female	1846	17
male	6437	77
mixed	204	18
na	8	0
non-binary	174	0
Unknown	48	6

```
Warning in chisq.test(table(cat_var1, cat_var2), correct = FALSE): Chi-squared approximation may be incorrect
```

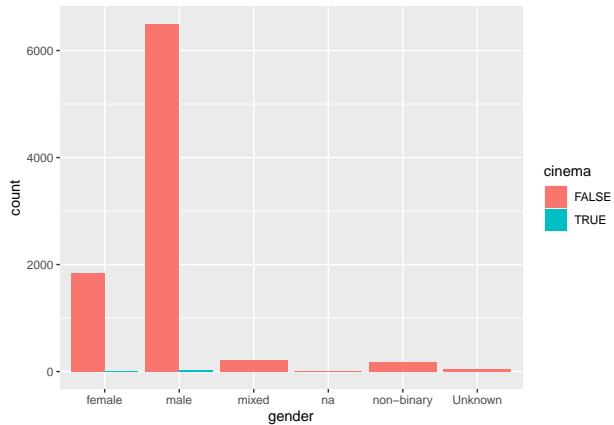


```
[1] "Chi-square test for gender and christmas"
```

Pearson's Chi-squared test

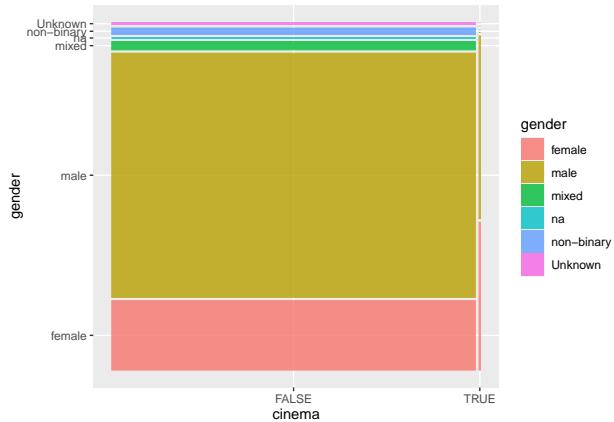
```
data: table(cat_var1, cat_var2)
X-squared = 122.59, df = 5, p-value < 2.2e-16
```

```
[1] "gender and cinema"
```



	FALSE	TRUE
female	1846	17
male	6493	21
mixed	222	0
na	8	0
non-binary	174	0
Unknown	54	0

```
Warning in chisq.test(table(cat_var1, cat_var2), correct = FALSE): Chi-squared approximation may be incorrect
```

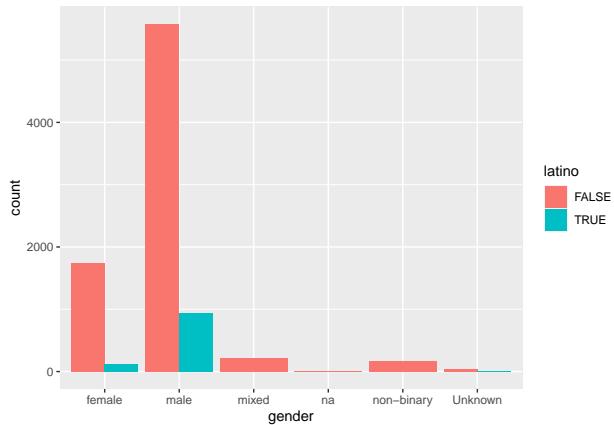


```
[1] "Chi-square test for gender and cinema"
```

Pearson's Chi-squared test

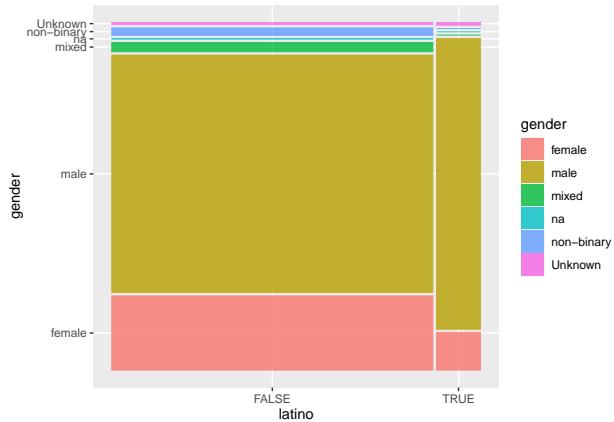
```
data: table(cat_var1, cat_var2)
X-squared = 13.867, df = 5, p-value = 0.01648
```

```
[1] "gender and latino"
```



	FALSE	TRUE
female	1742	121
male	5577	937
mixed	222	0
na	8	0
non-binary	174	0
Unknown	46	8

```
Warning in chisq.test(table(cat_var1, cat_var2), correct = FALSE): Chi-squared approximation may be incorrect
```

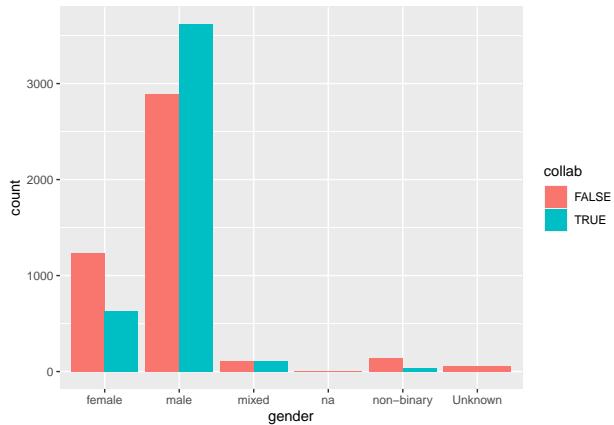


```
[1] "Chi-square test for gender and latino"
```

Pearson's Chi-squared test

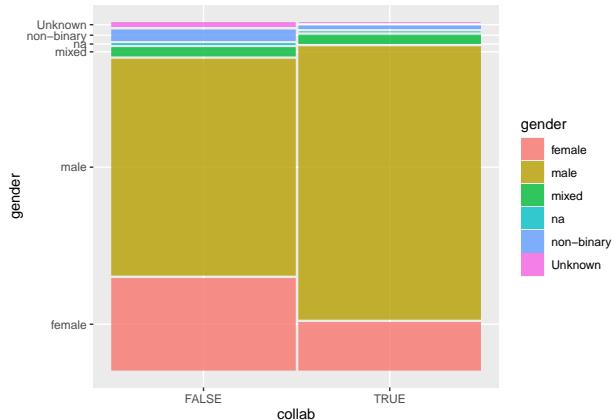
```
data: table(cat_var1, cat_var2)
X-squared = 143.32, df = 5, p-value < 2.2e-16
```

```
[1] "gender and collab"
```



	FALSE	TRUE
female	1230	633
male	2895	3619
mixed	111	111
na	8	0
non-binary	140	34
Unknown	54	0

```
Warning in chisq.test(table(cat_var1, cat_var2), correct = FALSE): Chi-squared approximation may be incorrect
```

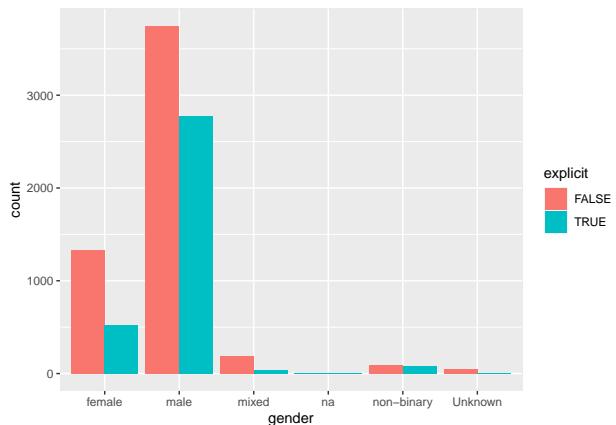


```
[1] "Chi-square test for gender and collab"
```

Pearson's Chi-squared test

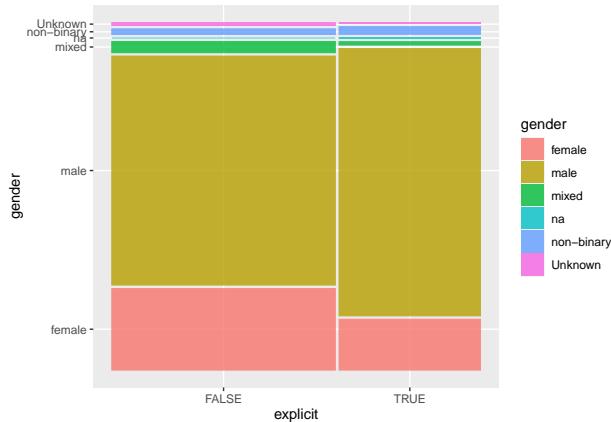
```
data: table(cat_var1, cat_var2)
X-squared = 398.17, df = 5, p-value < 2.2e-16
```

```
[1] "gender and explicit"
```



	FALSE	TRUE
female	1336	527
male	3744	2770
mixed	187	35
na	0	8
non-binary	95	79
Unknown	47	7

```
Warning in chisq.test(table(cat_var1, cat_var2), correct = FALSE): Chi-squared approximation may be incorrect
```

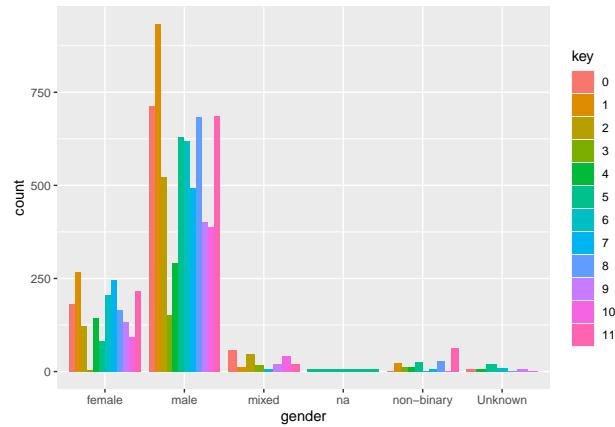


[1] "Chi-square test for gender and explicit"

Pearson's Chi-squared test

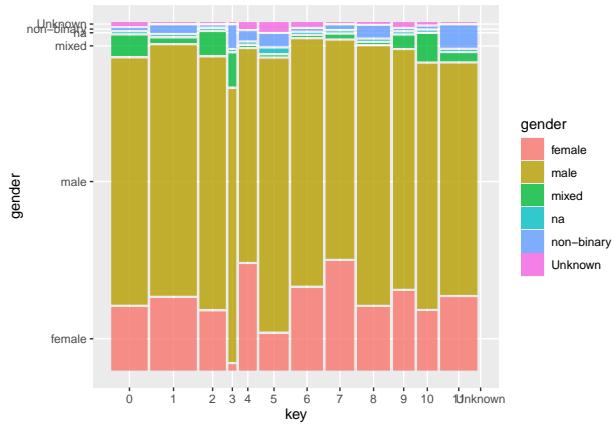
```
data: table(cat_var1, cat_var2)
X-squared = 205.38, df = 5, p-value < 2.2e-16
```

[1] "gender and key"



	0	1	2	3	4	5	6	7	8	9	10	11	Unknown
female	182	268	121	3	145	83	206	247	166	133	93	216	0
male	712	933	522	153	291	631	618	494	683	402	388	687	0
mixed	57	13	46	18	0	0	0	6	0	19	42	21	0
na	0	0	0	0	0	8	0	0	0	0	0	0	0
non-binary	2	24	0	12	11	26	1	6	28	0	1	63	0
Unknown	8	0	0	0	8	20	9	0	1	6	2	0	0

```
Warning in chisq.test(table(cat_var1, cat_var2), correct = FALSE): Chi-squared approximation may be incorrect
```

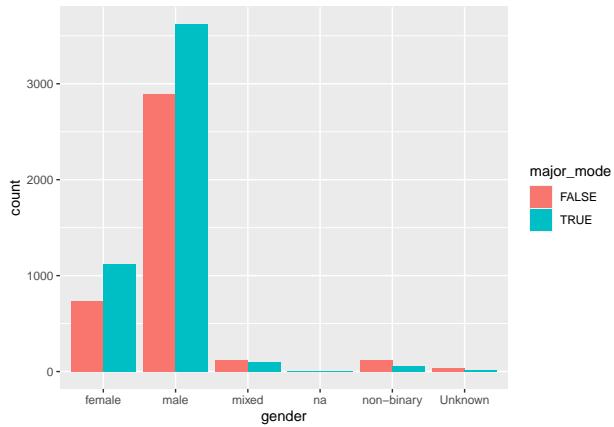


```
[1] "Chi-square test for gender and key"
```

Pearson's Chi-squared test

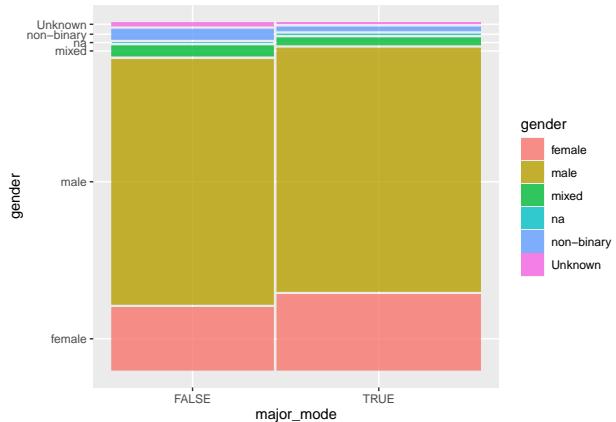
```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 60, p-value = NA
```

```
[1] "gender and major_mode"
```



	FALSE	TRUE
female	739	1124
male	2893	3621
mixed	119	103
na	0	8
non-binary	119	55
Unknown	38	16

```
Warning in chisq.test(table(cat_var1, cat_var2), correct = FALSE): Chi-squared approximation may be incorrect
```

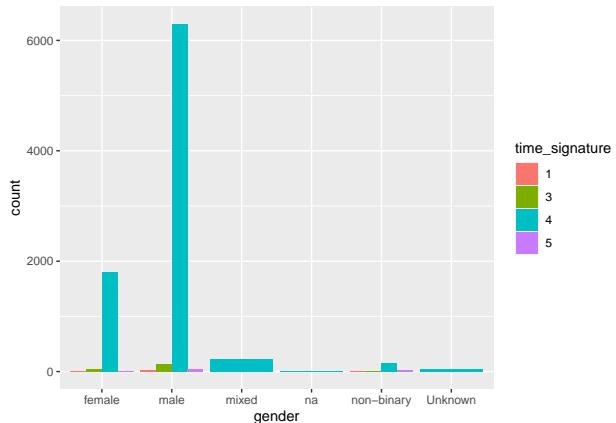


```
[1] "Chi-square test for gender and major_mode"
```

Pearson's Chi-squared test

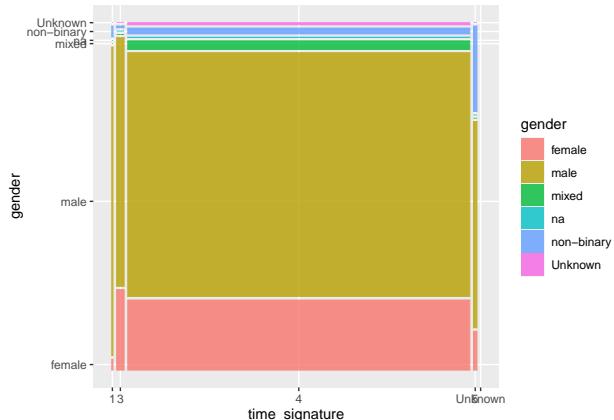
```
data: table(cat_var1, cat_var2)
X-squared = 86.198, df = 5, p-value < 2.2e-16
```

```
[1] "gender and time_signature"
```



	1	3	4	5	Unknown
female	1	45	1807	10	0
male	28	139	6294	53	0
mixed	0	0	222	0	0
na	0	0	8	0	0
non-binary	1	1	150	22	0
Unknown	0	0	54	0	0

```
Warning in chisq.test(table(cat_var1, cat_var2), correct = FALSE): Chi-squared approximation may be incorrect
```

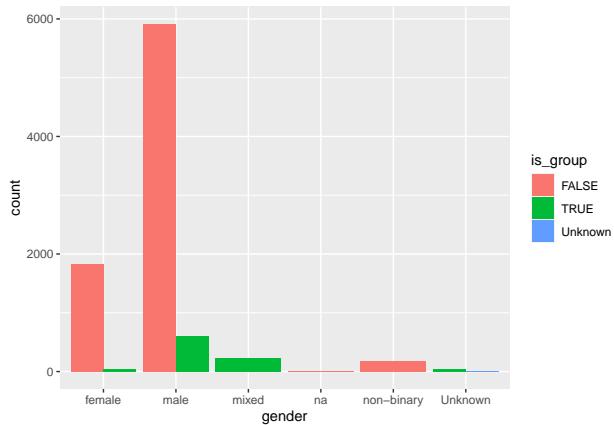


```
[1] "Chi-square test for gender and time_signature"
```

Pearson's Chi-squared test

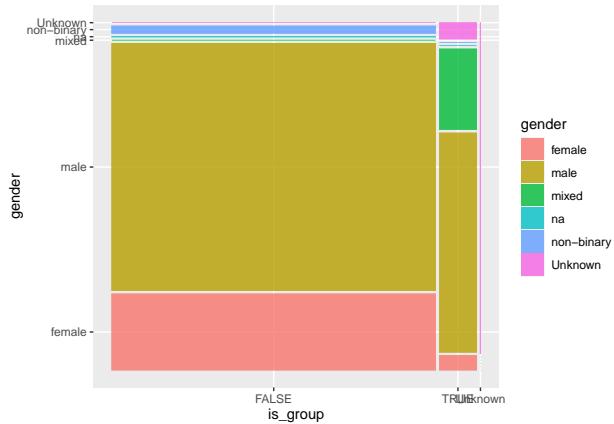
```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 20, p-value = NA
```

```
[1] "gender and is_group"
```



	FALSE	TRUE	Unknown
female	1823	40	0
male	5911	603	0
mixed	0	222	0
na	8	0	0
non-binary	174	0	0
Unknown	0	45	9

```
Warning in chisq.test(table(cat_var1, cat_var2), correct = FALSE): Chi-squared approximation may be incorrect
```

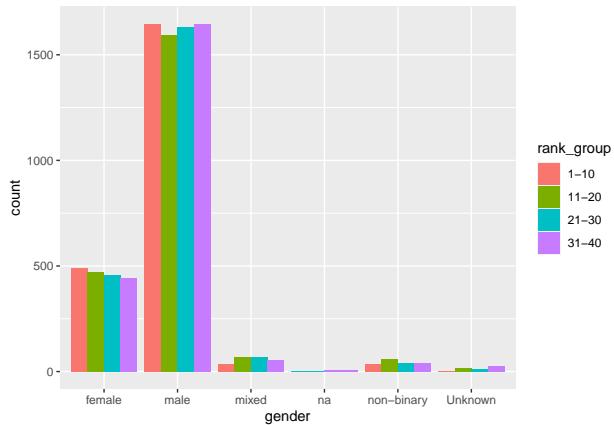


```
[1] "Chi-square test for gender and is_group"
```

Pearson's Chi-squared test

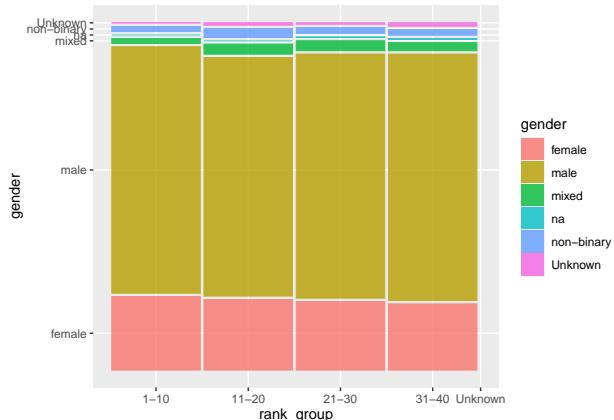
```
data: table(cat_var1, cat_var2)
X-squared = 3887.8, df = 10, p-value < 2.2e-16
```

```
[1] "gender and rank_group"
```



	1-10	11-20	21-30	31-40	Unknown
female	491	472	458	442	0
male	1645	1594	1630	1645	0
mixed	34	67	67	54	0
na	0	0	3	5	0
non-binary	36	60	40	38	0
Unknown	2	17	11	24	0

```
Warning in chisq.test(table(cat_var1, cat_var2), correct = FALSE): Chi-squared approximation may be incorrect
```

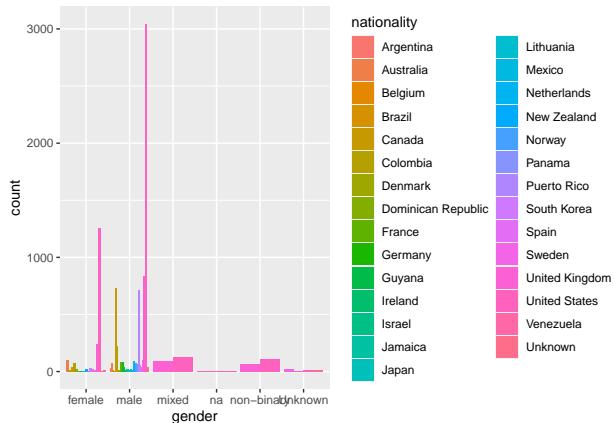


[1] "Chi-square test for gender and rank\_group"

Pearson's Chi-squared test

```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 20, p-value = NA
```

[1] "gender and nationality"



	Argentina	Australia	Belgium	Brazil	Canada	Colombia	Denmark
female	0	99	0	16	41	76	0
male	27	78	15	7	734	225	13
mixed	0	0	0	0	0	0	0
na	0	0	0	0	0	0	0
non-binary	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0

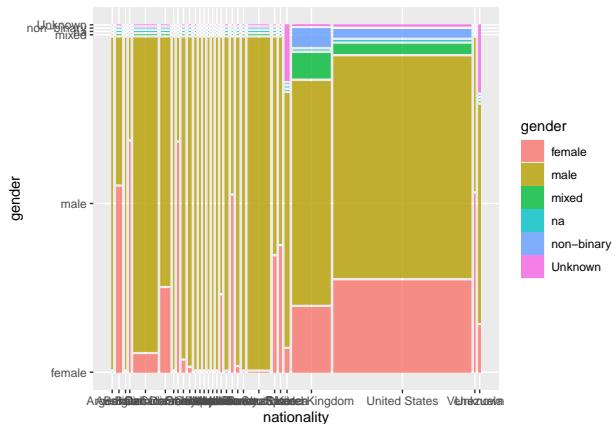
	Dominican Republic	France	Germany	Guyana	Ireland	Israel	Jamaica
female	18	3	1	0	0	0	0
male	8	87	85	43	14	19	26
mixed	0	0	0	0	0	0	0
na	0	0	0	0	0	0	0
non-binary	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0

	Japan	Lithuania	Mexico	Netherlands	New Zealand	Norway	Panama
female	0	0	3	0	25	1	0
male	9	25	10	94	22	72	62
mixed	0	0	0	0	0	0	0
na	0	0	0	0	0	0	0
non-binary	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0

	Puerto Rico	South Korea	Spain	Sweden	United Kingdom	United States
female	0	31	22	9	244	1258
male	715	58	36	100	840	3042
mixed	0	0	0	0	93	129
na	0	0	0	0	0	8
non-binary	0	0	0	0	68	106
Unknown	0	0	0	22	2	17

	Venezuela	Unknown
female	7	9
male	6	42
mixed	0	0
na	0	0
non-binary	0	0
Unknown	0	13

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

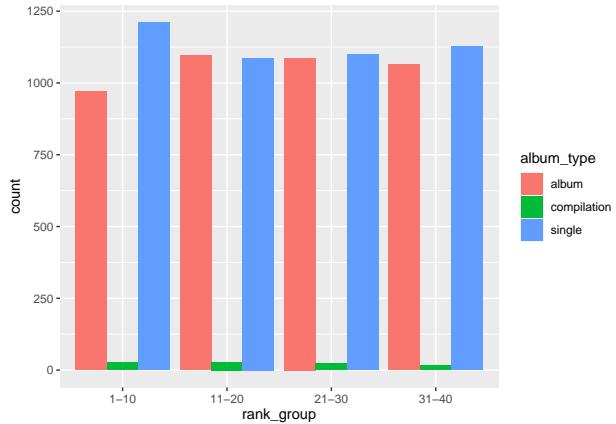


[1] "Chi-square test for gender and nationality"

Pearson's Chi-squared test

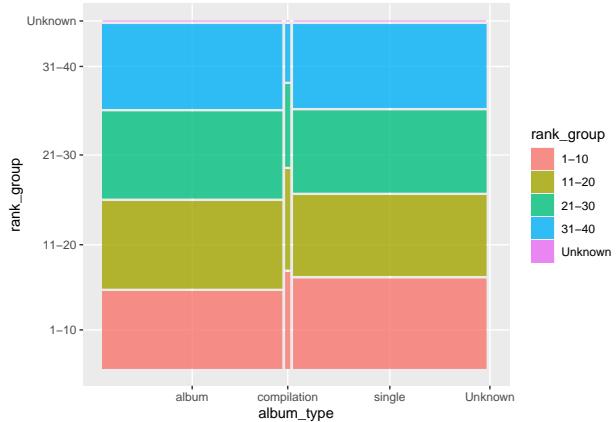
```
data: table(cat_var1, cat_var2)
X-squared = 2254.2, df = 140, p-value < 2.2e-16
```

[1] "rank\_group and album\_type"



	album	compilation	single	Unknown
1-10	971	27	1210	0
11-20	1095	28	1087	0
21-30	1087	23	1099	0
31-40	1064	16	1128	0
Unknown	0	0	0	0

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

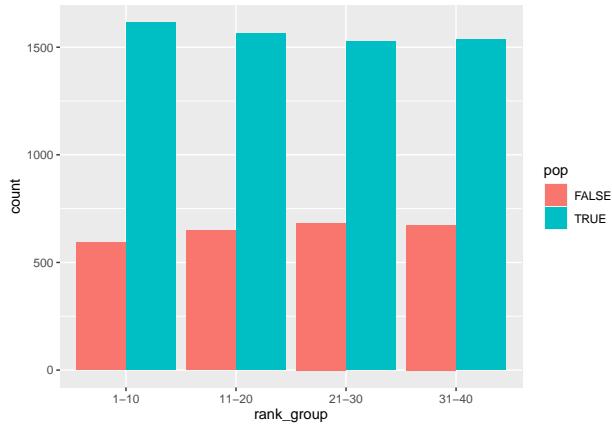


[1] "Chi-square test for rank\_group and album\_type"

Pearson's Chi-squared test

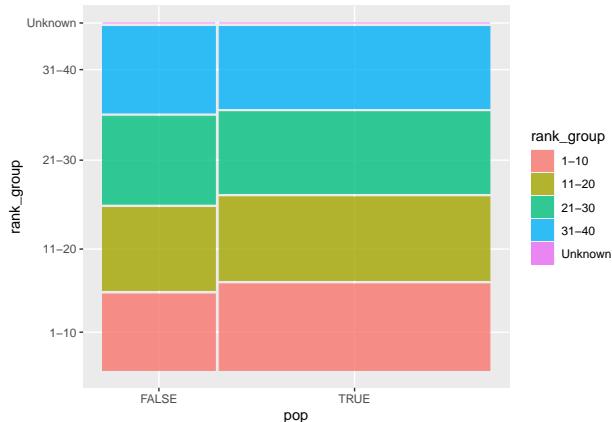
```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 12, p-value = NA
```

[1] "rank\_group and pop"



	FALSE	TRUE
1-10	594	1614
11-20	648	1562
21-30	683	1526
31-40	674	1534
Unknown	0	0

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

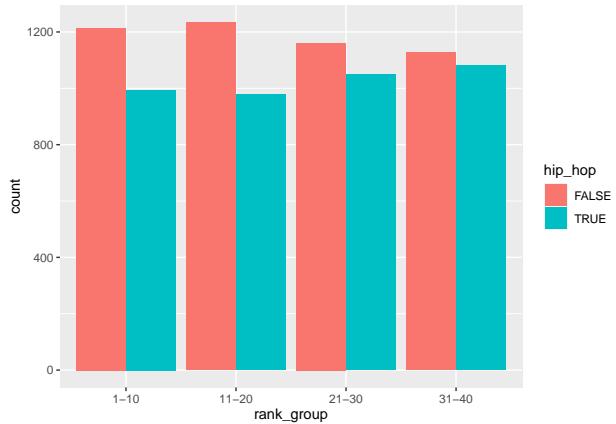


[1] "Chi-square test for rank\_group and pop"

Pearson's Chi-squared test

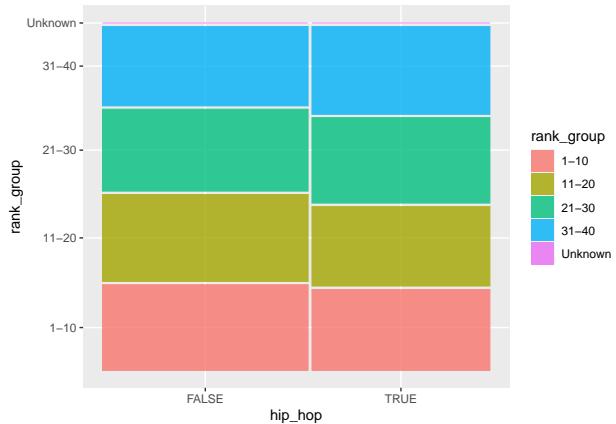
```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 4, p-value = NA
```

[1] "rank\_group and hip\_hop"



	FALSE	TRUE
1-10	1214	994
11-20	1233	977
21-30	1161	1048
31-40	1128	1080
Unknown	0	0

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

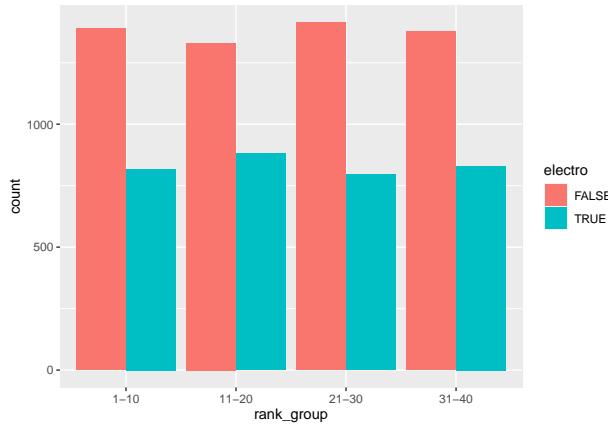


[1] "Chi-square test for rank\_group and hip\_hop"

Pearson's Chi-squared test

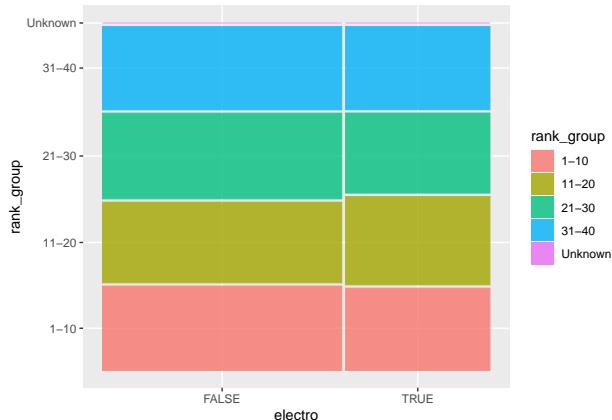
```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 4, p-value = NA
```

[1] "rank\_group and electro"



	FALSE	TRUE
1-10	1390	818
11-20	1330	880
21-30	1413	796
31-40	1378	830
Unknown	0	0

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

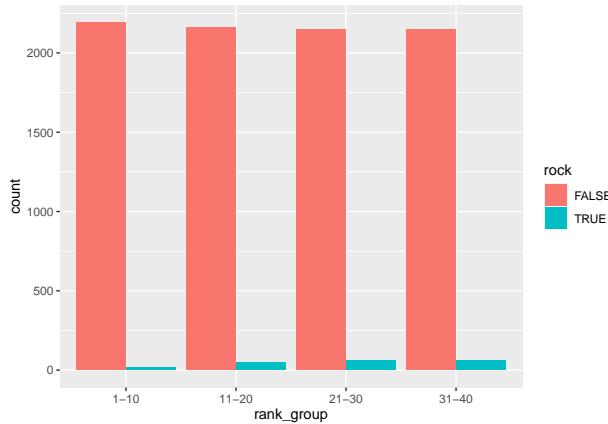


[1] "Chi-square test for rank\_group and electro"

Pearson's Chi-squared test

```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 4, p-value = NA
```

[1] "rank\_group and rock"

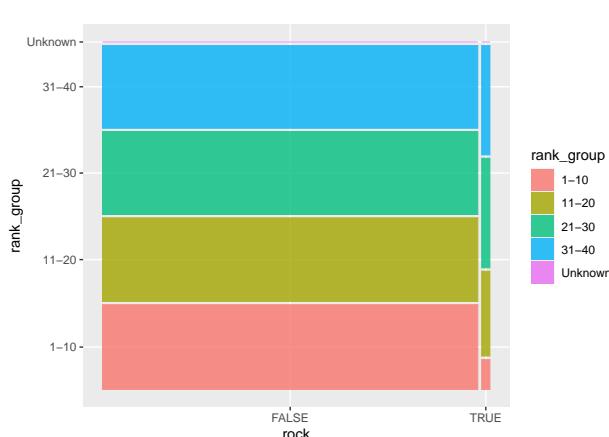


```

      FALSE  TRUE
1-10     2191    17
11-20    2162    48
21-30    2147    62
31-40    2146    62
Unknown      0     0

```

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect



```
[1] "Chi-square test for rank_group and rock"
```

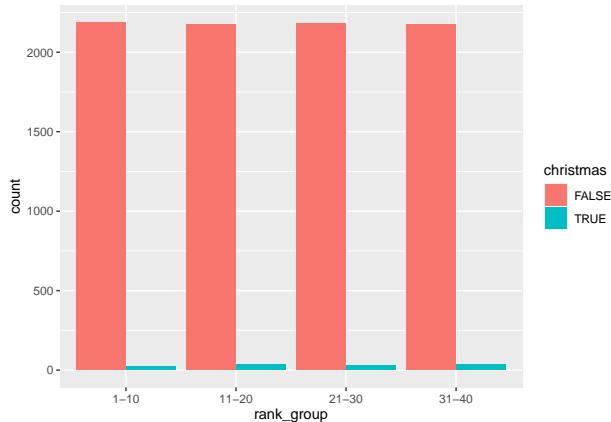
```
Pearson's Chi-squared test
```

```

data: table(cat_var1, cat_var2)
X-squared = NaN, df = 4, p-value = NA

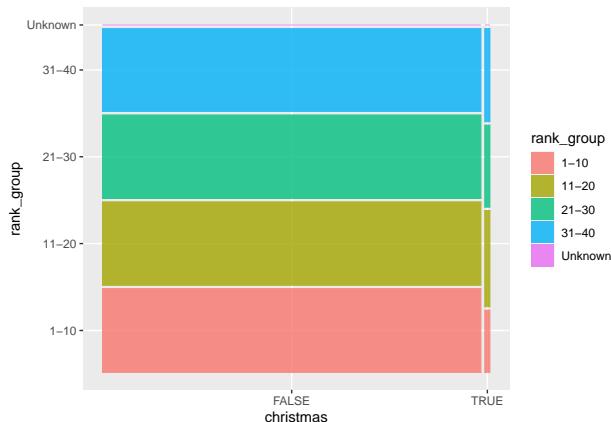
```

```
[1] "rank_group and christmas"
```



	FALSE	TRUE
1-10	2186	22
11-20	2176	34
21-30	2180	29
31-40	2175	33
Unknown	0	0

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

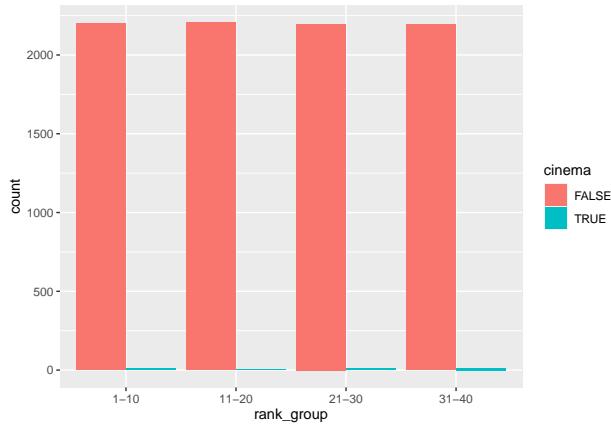


[1] "Chi-square test for rank\_group and christmas"

Pearson's Chi-squared test

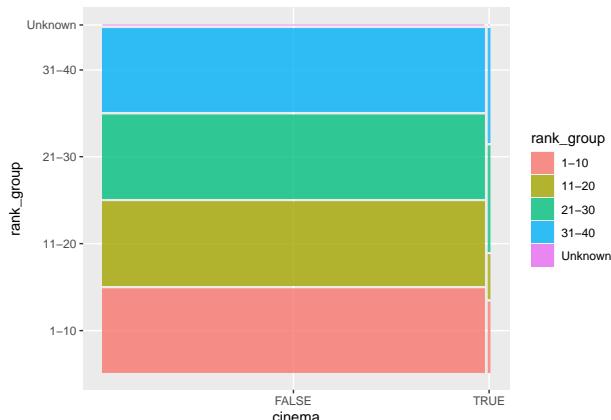
```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 4, p-value = NA
```

[1] "rank\_group and cinema"



	FALSE	TRUE
1-10	2200	8
11-20	2205	5
21-30	2197	12
31-40	2195	13
Unknown	0	0

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

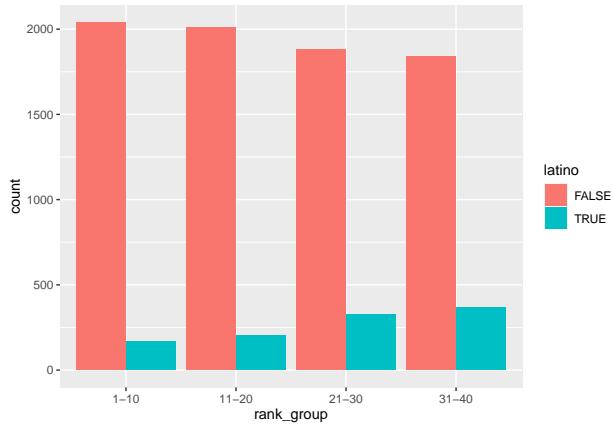


[1] "Chi-square test for rank\_group and cinema"

Pearson's Chi-squared test

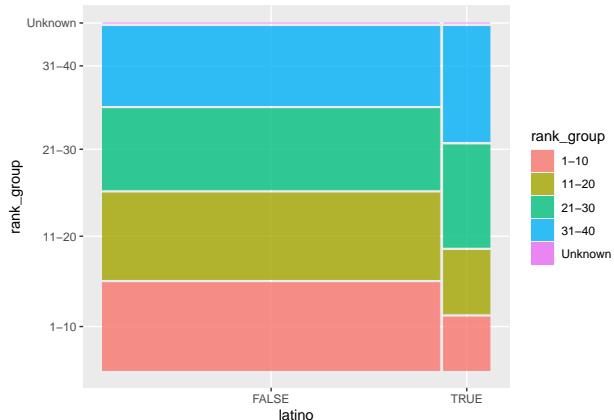
```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 4, p-value = NA
```

[1] "rank\_group and latino"



	FALSE	TRUE
1-10	2038	170
11-20	2008	202
21-30	1883	326
31-40	1840	368
Unknown	0	0

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

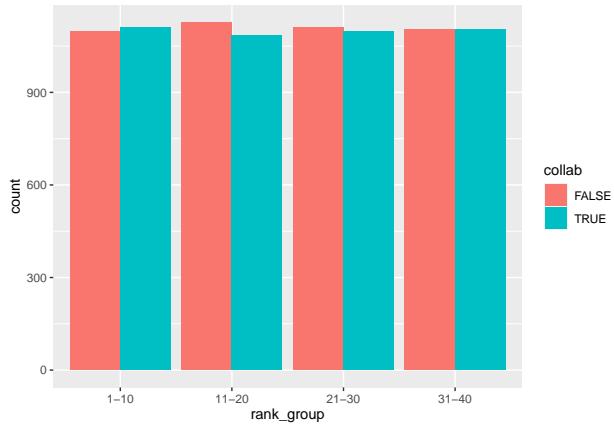


[1] "Chi-square test for rank\_group and latino"

Pearson's Chi-squared test

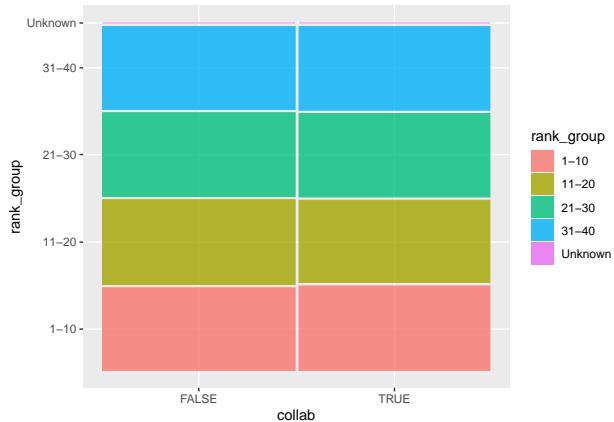
```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 4, p-value = NA
```

[1] "rank\_group and collab"



	FALSE	TRUE
1-10	1097	1111
11-20	1126	1084
21-30	1111	1098
31-40	1104	1104
Unknown	0	0

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

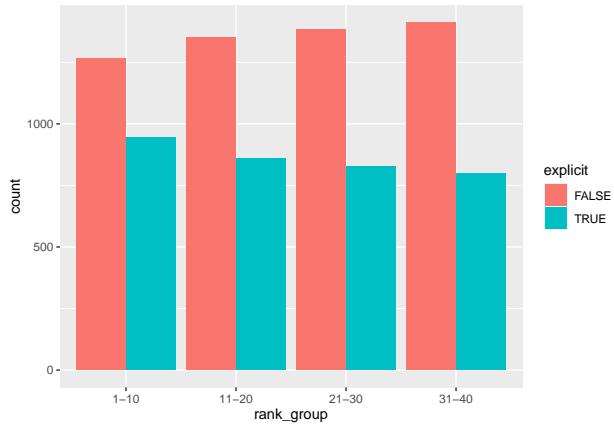


[1] "Chi-square test for rank\_group and collab"

Pearson's Chi-squared test

```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 4, p-value = NA
```

[1] "rank\_group and explicit"



	FALSE	TRUE
1-10	1265	943
11-20	1350	860
21-30	1383	826
31-40	1411	797
Unknown	0	0

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

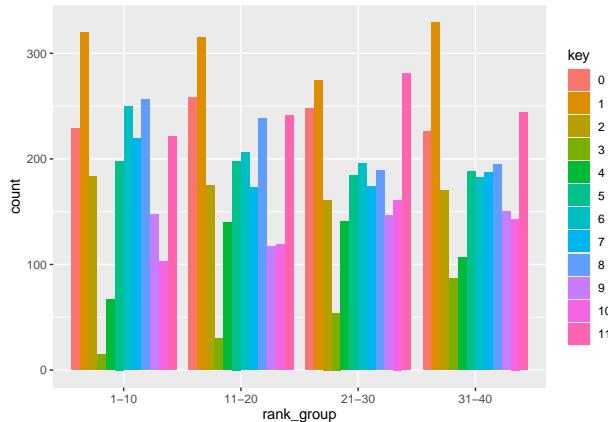


[1] "Chi-square test for rank\_group and explicit"

Pearson's Chi-squared test

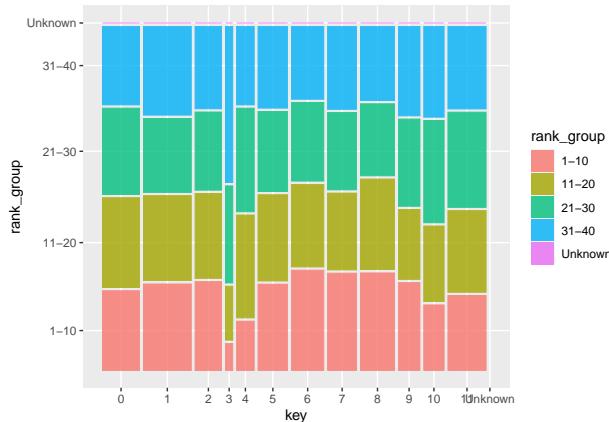
```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 4, p-value = NA
```

[1] "rank\_group and key"



	0	1	2	3	4	5	6	7	8	9	10	11	Unknown
1-10	229	320	183	15	67	198	250	219	256	147	103	221	0
11-20	258	315	175	30	140	198	206	173	238	117	119	241	0
21-30	248	274	161	54	141	184	196	174	189	146	161	281	0
31-40	226	329	170	87	107	188	182	187	195	150	143	244	0
Unknown	0	0	0	0	0	0	0	0	0	0	0	0	0

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

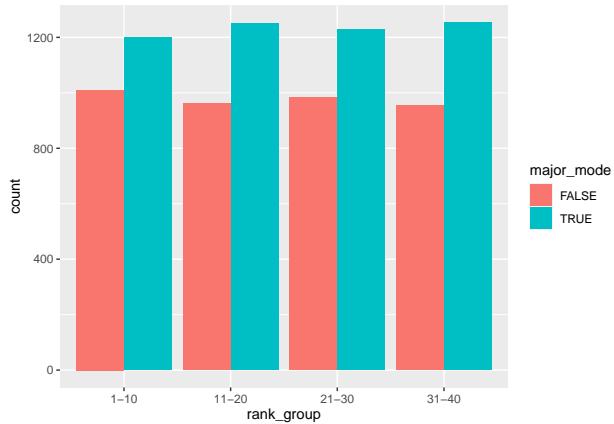


[1] "Chi-square test for rank\_group and key"

Pearson's Chi-squared test

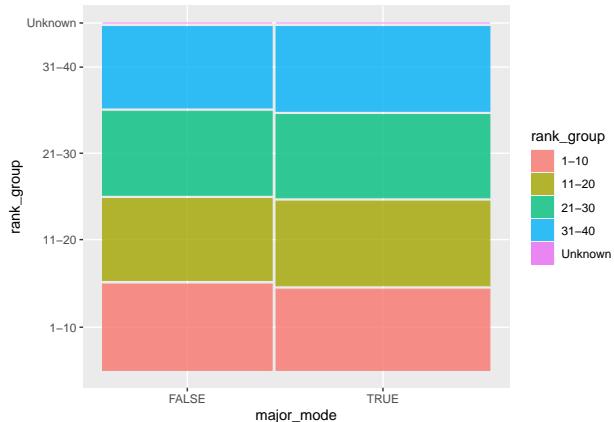
```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 48, p-value = NA
```

[1] "rank\_group and major\_mode"



	FALSE	TRUE
1-10	1010	1198
11-20	961	1249
21-30	982	1227
31-40	955	1253
Unknown	0	0

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

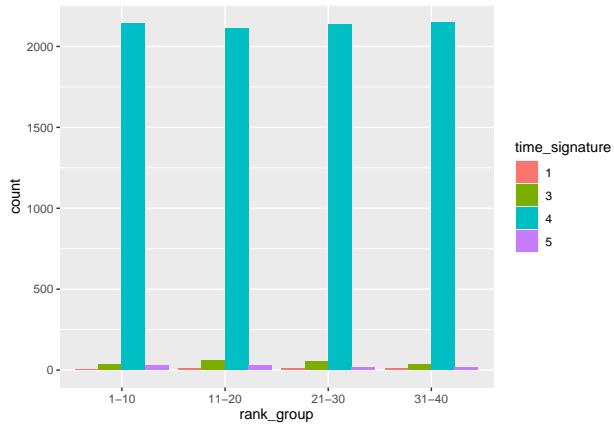


[1] "Chi-square test for rank\_group and major\_mode"

Pearson's Chi-squared test

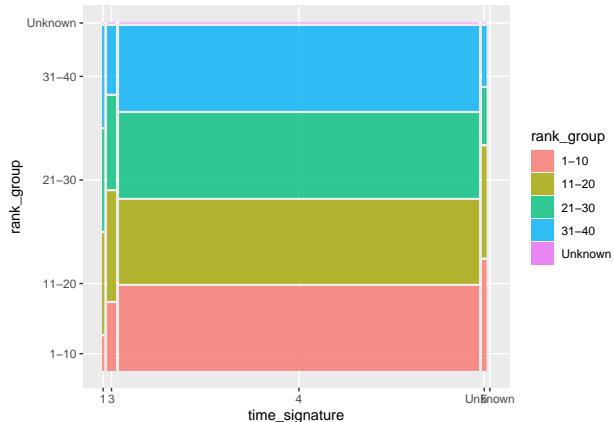
```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 4, p-value = NA
```

[1] "rank\_group and time\_signature"



	1	3	4	5	Unknown
1-10	3	37	2140	28	0
11-20	9	60	2113	28	0
21-30	9	51	2135	14	0
31-40	9	37	2147	15	0
Unknown	0	0	0	0	0

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

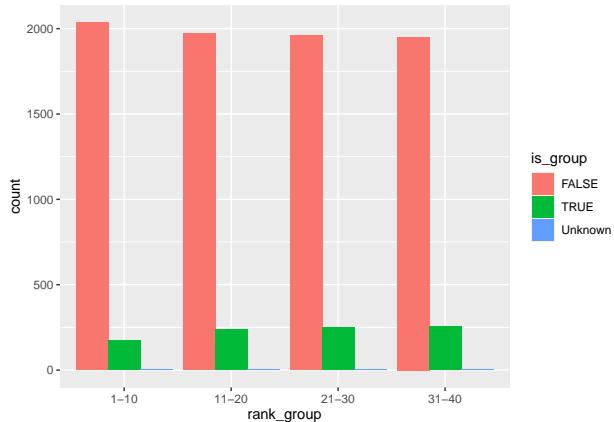


[1] "Chi-square test for rank\_group and time\_signature"

Pearson's Chi-squared test

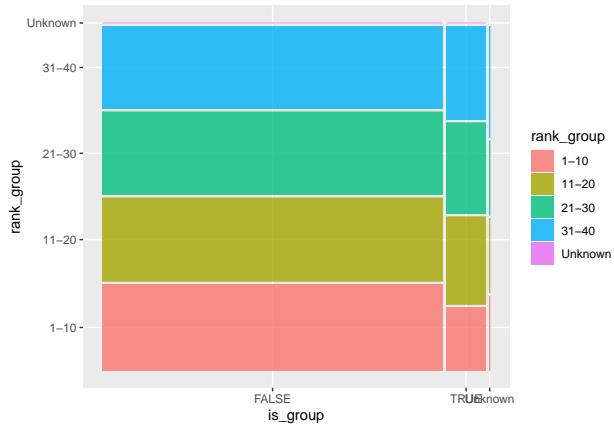
```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 16, p-value = NA
```

[1] "rank\_group and is\_group"



	FALSE	TRUE	Unknown
1-10	2035	171	2
11-20	1970	238	2
21-30	1960	247	2
31-40	1951	254	3
Unknown	0	0	0

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

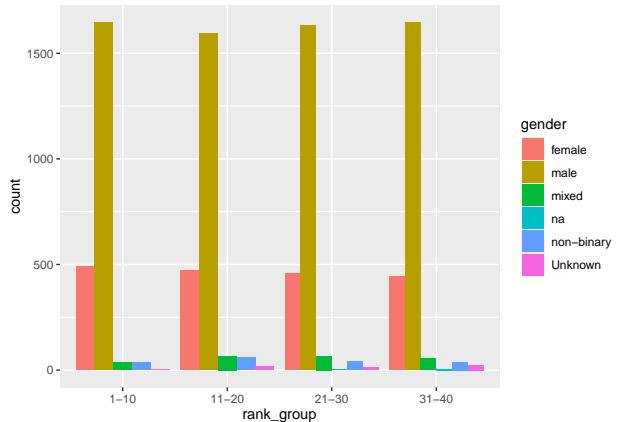


[1] "Chi-square test for rank\_group and is\_group"

Pearson's Chi-squared test

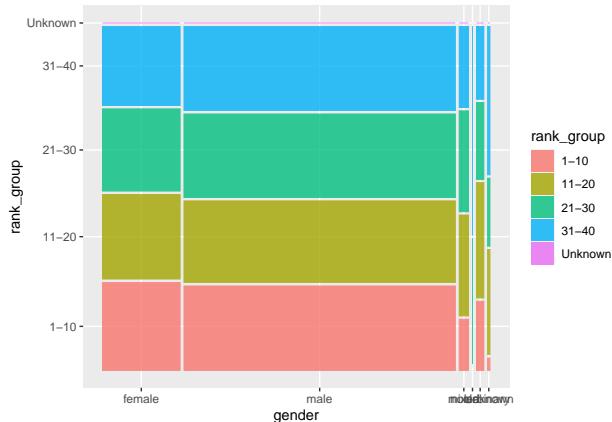
```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 8, p-value = NA
```

[1] "rank\_group and gender"



	female	male	mixed	na	non-binary	Unknown
1-10	491	1645	34	0	36	2
11-20	472	1594	67	0	60	17
21-30	458	1630	67	3	40	11
31-40	442	1645	54	5	38	24
Unknown	0	0	0	0	0	0

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

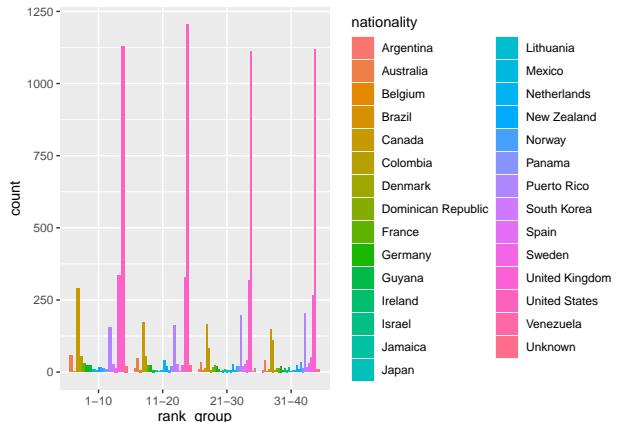


[1] "Chi-square test for rank\_group and gender"

Pearson's Chi-squared test

```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 20, p-value = NA
```

[1] "rank\_group and nationality"



	Argentina	Australia	Belgium	Brazil	Canada	Colombia	Denmark
1-10	0	56	2	0	290	54	0
11-20	12	48	7	0	172	53	0
21-30	8	33	4	13	166	83	7
31-40	7	40	2	10	147	111	6
Unknown	0	0	0	0	0	0	0

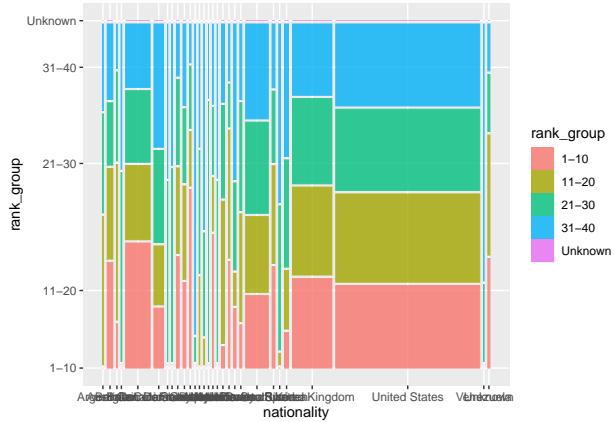
	Dominican Republic	France	Germany	Guyana	Ireland	Israel	Jamaica	Japan
1-10	0	30	22	23	0	0	0	0
11-20	0	23	24	7	0	5	2	0
21-30	15	23	19	8	1	7	8	7
31-40	11	14	21	5	13	7	16	2
Unknown	0	0	0	0	0	0	0	0

	Lithuania	Mexico	Netherlands	New Zealand	Norway	Panama	Puerto Rico
1-10	10	0	6	15	13	8	155
11-20	4	0	40	18	7	20	162
21-30	5	7	26	6	19	20	195
31-40	6	6	22	8	34	14	203
Unknown	0	0	0	0	0	0	0

	South Korea	Spain	Sweden	United Kingdom	United States	Venezuela
1-10	27	0	14	335	1127	0
11-20	26	2	23	328	1204	0
21-30	19	25	42	318	1111	3
31-40	17	31	52	266	1118	10
Unknown	0	0	0	0	0	0

	Unknown
1-10	21
11-20	23
21-30	11
31-40	9
Unknown	0

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

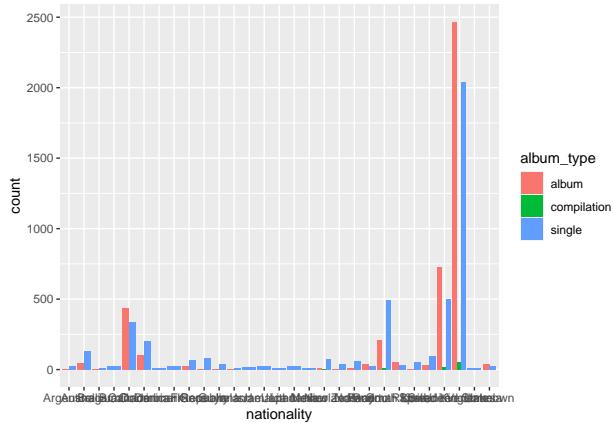


```
[1] "Chi-square test for rank_group and nationality"
```

Pearson's Chi-squared test

```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 112, p-value = NA
```

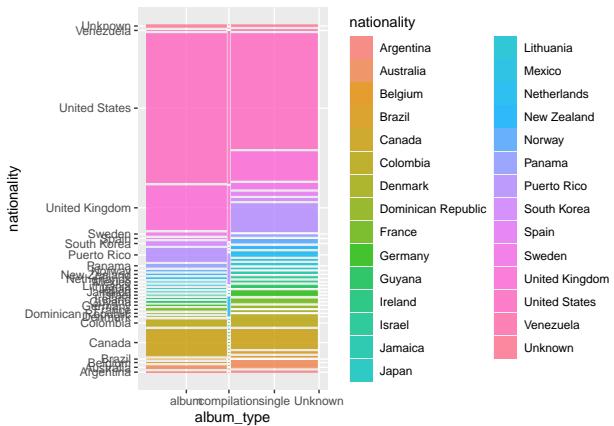
```
[1] "nationality and album_type"
```



	album	compilation	single	Unknown
Argentina	5	0	22	0
Australia	45	0	132	0
Belgium	4	0	11	0
Brazil	0	0	23	0
Canada	437	0	338	0
Colombia	101	0	200	0
Denmark	0	0	13	0
Dominican Republic	0	0	26	0
France	23	0	67	0
Germany	1	0	85	0
Guyana	2	0	41	0
Ireland	1	0	13	0
Israel	0	0	19	0
Jamaica	0	0	26	0
Japan	0	0	9	0

Lithuania	0	0	25	0
Mexico	0	0	13	0
Netherlands	12	7	75	0
New Zealand	6	0	41	0
Norway	10	0	63	0
Panama	39	0	23	0
Puerto Rico	212	11	492	0
South Korea	55	0	34	0
Spain	3	0	55	0
Sweden	34	0	97	0
United Kingdom	725	20	502	0
United States	2465	56	2039	0
Venezuela	0	0	13	0
Unknown	37	0	27	0

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

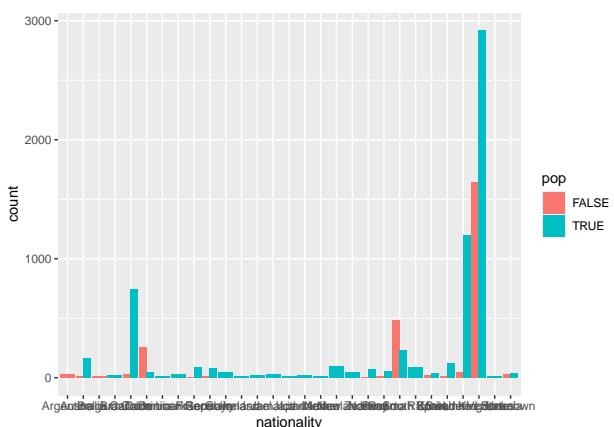


[1] "Chi-square test for nationality and album\_type"

Pearson's Chi-squared test

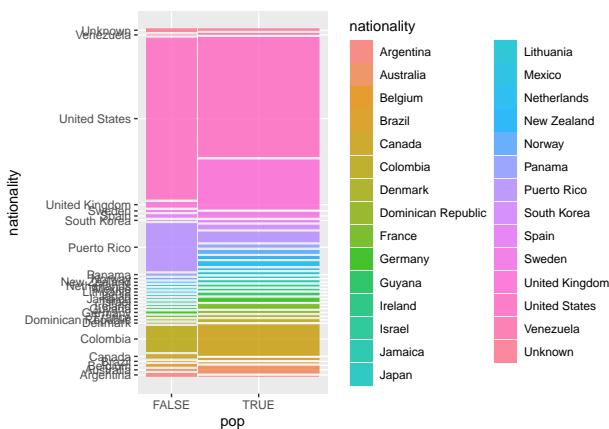
```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 84, p-value = NA
```

[1] "nationality and pop"



	FALSE	TRUE
Argentina	27	0
Australia	9	168
Belgium	15	0
Brazil	0	23
Canada	33	742
Colombia	255	46
Denmark	0	13
Dominican Republic	0	26
France	3	87
Germany	10	76
Guyana	0	43
Ireland	0	14
Israel	0	19
Jamaica	0	26
Japan	0	9
Lithuania	0	25
Mexico	0	13
Netherlands	0	94
New Zealand	0	47
Norway	4	69
Panama	11	51
Puerto Rico	480	235
South Korea	0	89
Spain	23	35
Sweden	12	119
United Kingdom	48	1199
United States	1641	2919
Venezuela	0	13
Unknown	28	36

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

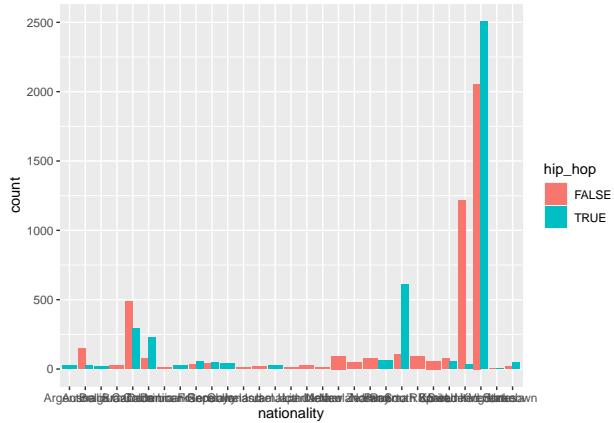


[1] "Chi-square test for nationality and pop"

Pearson's Chi-squared test

```
data: table(cat_var1, cat_var2)
X-squared = 2099.2, df = 28, p-value < 2.2e-16
```

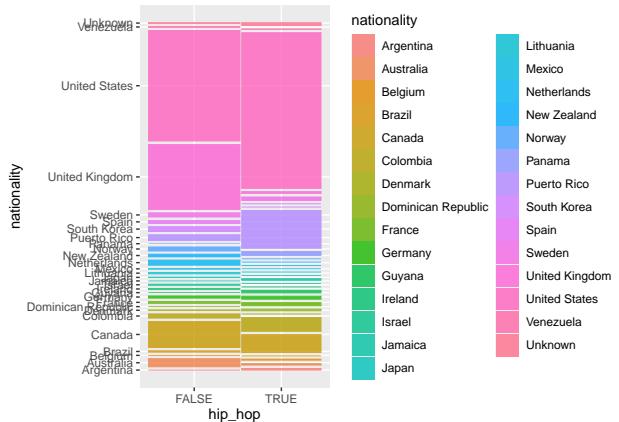
```
[1] "nationality and hip_hop"
```



FALSE TRUE

	FALSE	TRUE
Argentina	0	27
Australia	150	27
Belgium	0	15
Brazil	23	0
Canada	486	289
Colombia	77	224
Denmark	13	0
Dominican Republic	0	26
France	36	54
Germany	39	47
Guyana	0	43
Ireland	14	0
Israel	19	0
Jamaica	0	26
Japan	9	0
Lithuania	25	0
Mexico	13	0
Netherlands	94	0
New Zealand	47	0
Norway	73	0
Panama	0	62
Puerto Rico	104	611
South Korea	89	0
Spain	58	0
Sweden	76	55
United Kingdom	1214	33
United States	2055	2505
Venezuela	7	6
Unknown	15	49

```
Warning in chisq.test(table(cat_var1, cat_var2), correct = FALSE): Chi-squared approximation may be incorrect
```

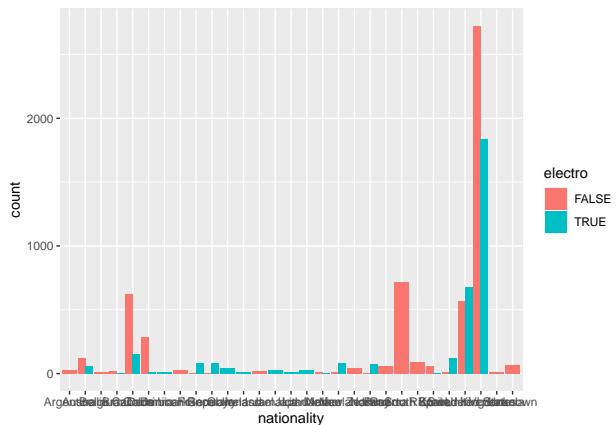


```
[1] "Chi-square test for nationality and hip_hop"
```

Pearson's Chi-squared test

```
data: table(cat_var1, cat_var2)
X-squared = 2398.1, df = 28, p-value < 2.2e-16
```

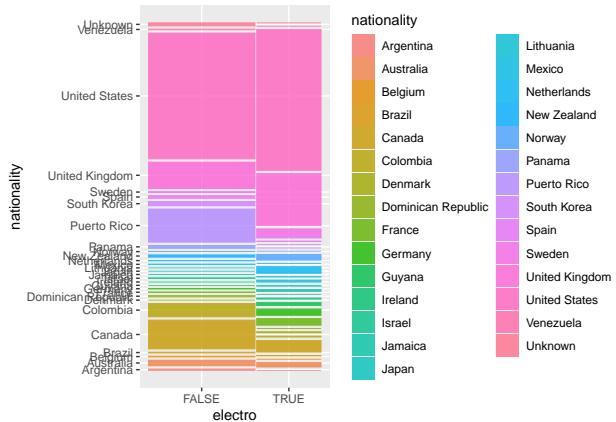
```
[1] "nationality and electro"
```



	FALSE	TRUE
Argentina	27	0
Australia	119	58
Belgium	15	0
Brazil	16	7
Canada	622	153
Colombia	289	12
Denmark	0	13
Dominican Republic	26	0
France	4	86
Germany	4	82
Guyana	0	43
Ireland	0	14
Israel	19	0
Jamaica	0	26
Japan	0	9

Lithuania	0	25
Mexico	10	3
Netherlands	8	86
New Zealand	47	0
Norway	1	72
Panama	62	0
Puerto Rico	715	0
South Korea	89	0
Spain	57	1
Sweden	13	118
United Kingdom	569	678
United States	2722	1838
Venezuela	13	0
Unknown	64	0

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

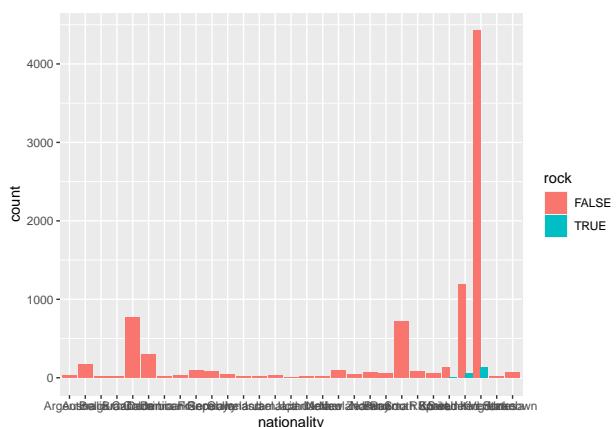


[1] "Chi-square test for nationality and electro"

Pearson's Chi-squared test

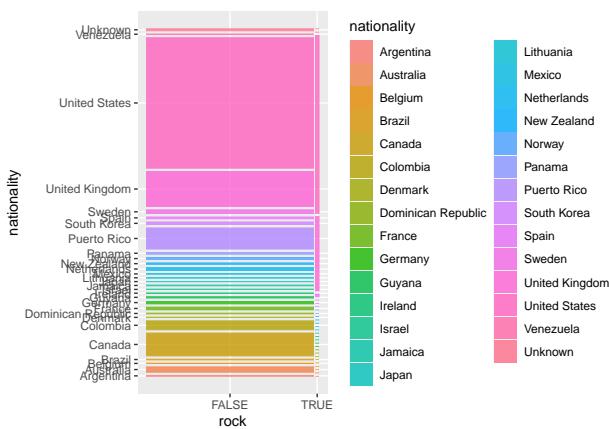
```
data: table(cat_var1, cat_var2)
X-squared = 1950.6, df = 28, p-value < 2.2e-16
```

[1] "nationality and rock"



	FALSE	TRUE
Argentina	27	0
Australia	177	0
Belgium	15	0
Brazil	23	0
Canada	775	0
Colombia	301	0
Denmark	13	0
Dominican Republic	26	0
France	90	0
Germany	86	0
Guyana	43	0
Ireland	14	0
Israel	19	0
Jamaica	26	0
Japan	9	0
Lithuania	25	0
Mexico	13	0
Netherlands	94	0
New Zealand	47	0
Norway	73	0
Panama	62	0
Puerto Rico	715	0
South Korea	89	0
Spain	58	0
Sweden	129	2
United Kingdom	1192	55
United States	4428	132
Venezuela	13	0
Unknown	64	0

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

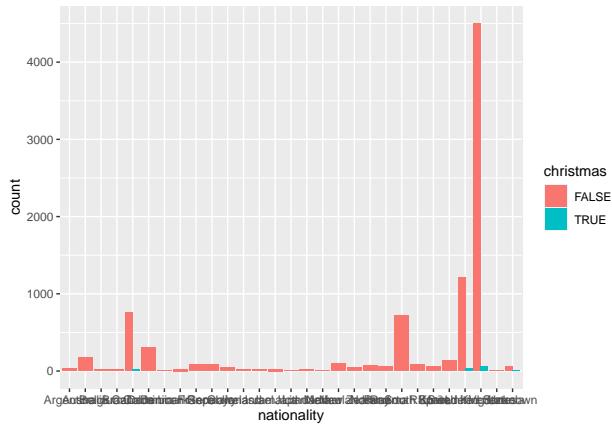


[1] "Chi-square test for nationality and rock"

Pearson's Chi-squared test

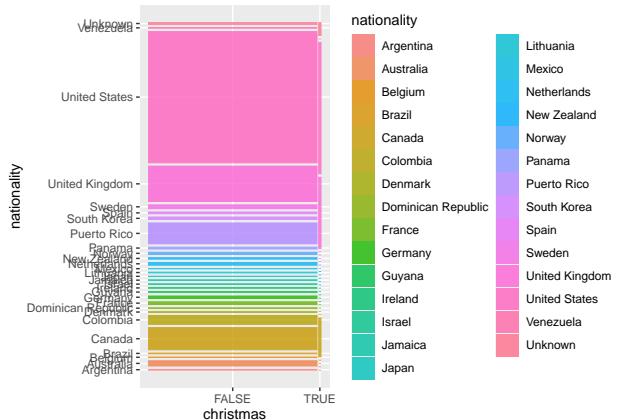
```
data: table(cat_var1, cat_var2)
X-squared = 106.73, df = 28, p-value = 4.003e-11
```

```
[1] "nationality and christmas"
```



	FALSE	TRUE
Argentina	27	0
Australia	177	0
Belgium	15	0
Brazil	23	0
Canada	757	18
Colombia	301	0
Denmark	13	0
Dominican Republic	26	0
France	90	0
Germany	86	0
Guyana	43	0
Ireland	14	0
Israel	19	0
Jamaica	26	0
Japan	9	0
Lithuania	25	0
Mexico	13	0
Netherlands	94	0
New Zealand	47	0
Norway	73	0
Panama	62	0
Puerto Rico	715	0
South Korea	89	0
Spain	58	0
Sweden	131	0
United Kingdom	1214	33
United States	4499	61
Venezuela	13	0
Unknown	58	6

```
Warning in chisq.test(table(cat_var1, cat_var2), correct = FALSE): Chi-squared approximation may be incorrect
```

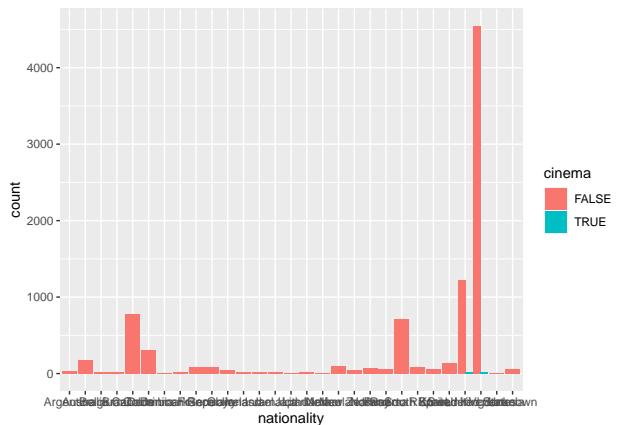


```
[1] "Chi-square test for nationality and christmas"
```

Pearson's Chi-squared test

```
data: table(cat_var1, cat_var2)
X-squared = 83.009, df = 28, p-value = 2.358e-07
```

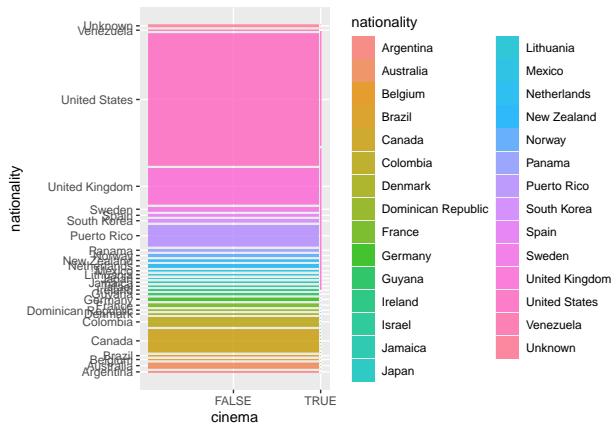
```
[1] "nationality and cinema"
```



	FALSE	TRUE
Argentina	27	0
Australia	177	0
Belgium	15	0
Brazil	23	0
Canada	775	0
Colombia	301	0
Denmark	13	0
Dominican Republic	26	0
France	90	0
Germany	86	0
Guyana	43	0
Ireland	14	0
Israel	19	0
Jamaica	26	0
Japan	9	0

Lithuania	25	0
Mexico	13	0
Netherlands	94	0
New Zealand	47	0
Norway	73	0
Panama	62	0
Puerto Rico	715	0
South Korea	89	0
Spain	58	0
Sweden	131	0
United Kingdom	1226	21
United States	4543	17
Venezuela	13	0
Unknown	64	0

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

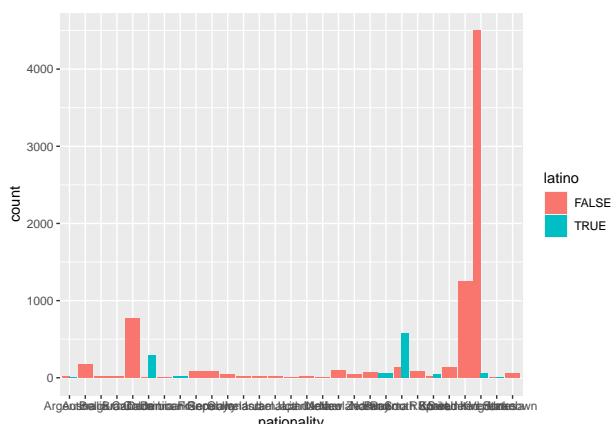


[1] "Chi-square test for nationality and cinema"

Pearson's Chi-squared test

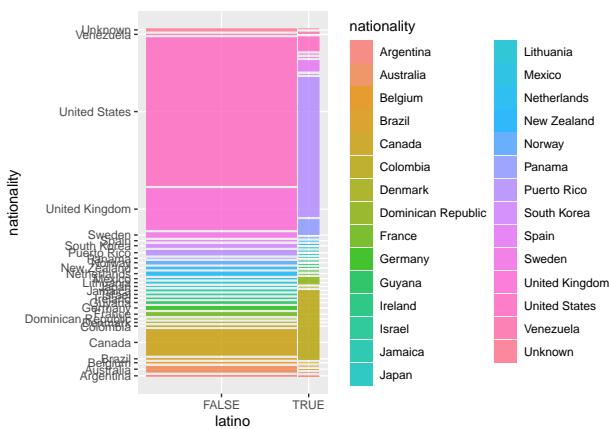
```
data: table(cat_var1, cat_var2)
X-squared = 59.213, df = 28, p-value = 0.0005128
```

[1] "nationality and latino"



	FALSE	TRUE
Argentina	26	1
Australia	177	0
Belgium	15	0
Brazil	23	0
Canada	775	0
Colombia	12	289
Denmark	13	0
Dominican Republic	0	26
France	90	0
Germany	86	0
Guyana	43	0
Ireland	14	0
Israel	19	0
Jamaica	26	0
Japan	9	0
Lithuania	25	0
Mexico	13	0
Netherlands	94	0
New Zealand	47	0
Norway	73	0
Panama	0	62
Puerto Rico	134	581
South Korea	89	0
Spain	15	43
Sweden	131	0
United Kingdom	1247	0
United States	4502	58
Venezuela	7	6
Unknown	64	0

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

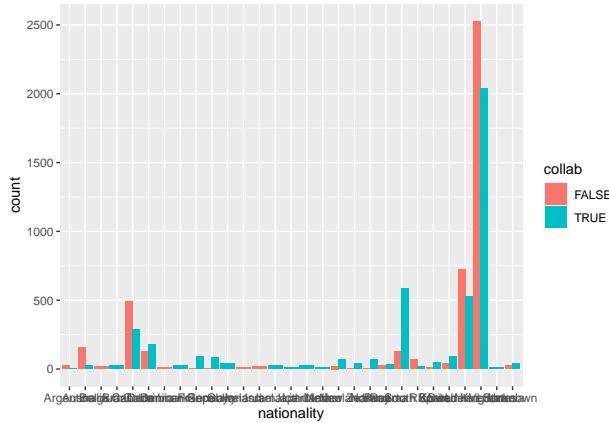


[1] "Chi-square test for nationality and latino"

Pearson's Chi-squared test

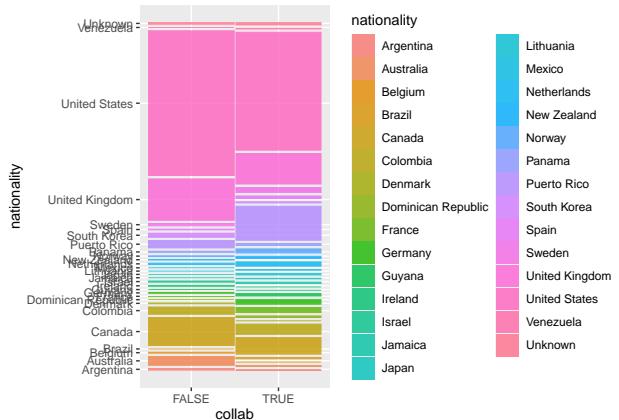
```
data: table(cat_var1, cat_var2)
X-squared = 7016.1, df = 28, p-value < 2.2e-16
```

```
[1] "nationality and collab"
```



	FALSE	TRUE
Argentina	26	1
Australia	154	23
Belgium	15	0
Brazil	0	23
Canada	490	285
Colombia	125	176
Denmark	13	0
Dominican Republic	0	26
France	1	89
Germany	2	84
Guyana	0	43
Ireland	14	0
Israel	19	0
Jamaica	0	26
Japan	0	9
Lithuania	0	25
Mexico	0	13
Netherlands	22	72
New Zealand	6	41
Norway	4	69
Panama	26	36
Puerto Rico	128	587
South Korea	70	19
Spain	14	44
Sweden	39	92
United Kingdom	720	527
United States	2524	2036
Venezuela	0	13
Unknown	26	38

```
Warning in chisq.test(table(cat_var1, cat_var2), correct = FALSE): Chi-squared approximation may be incorrect
```

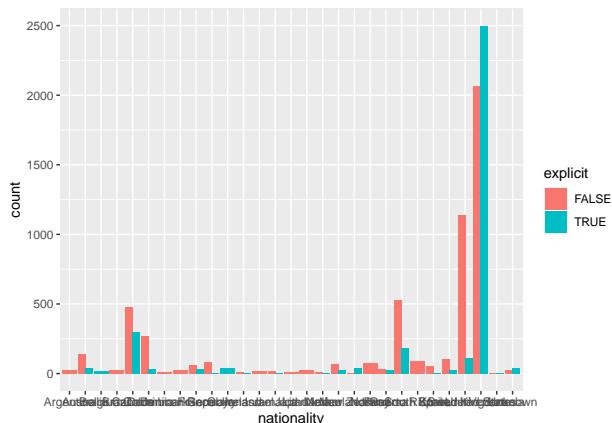


```
[1] "Chi-square test for nationality and collab"
```

Pearson's Chi-squared test

```
data: table(cat_var1, cat_var2)
X-squared = 1143.4, df = 28, p-value < 2.2e-16
```

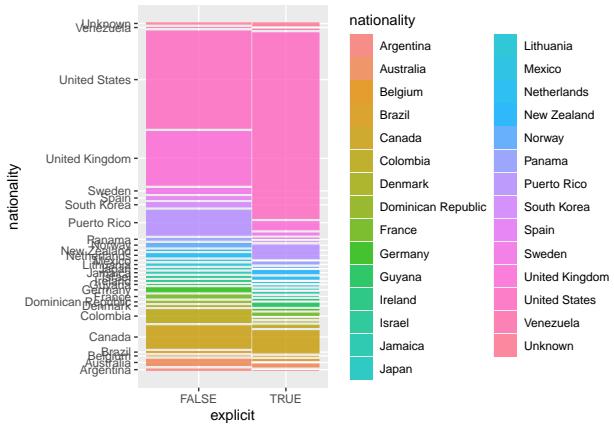
```
[1] "nationality and explicit"
```



	FALSE	TRUE
Argentina	27	0
Australia	137	40
Belgium	0	15
Brazil	23	0
Canada	476	299
Colombia	272	29
Denmark	13	0
Dominican Republic	26	0
France	60	30
Germany	84	2
Guyana	0	43
Ireland	12	2
Israel	19	0
Jamaica	19	7
Japan	9	0

Lithuania	25	0
Mexico	11	2
Netherlands	66	28
New Zealand	6	41
Norway	73	0
Panama	35	27
Puerto Rico	530	185
South Korea	89	0
Spain	57	1
Sweden	105	26
United Kingdom	1139	108
United States	2064	2496
Venezuela	7	6
Unknown	25	39

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

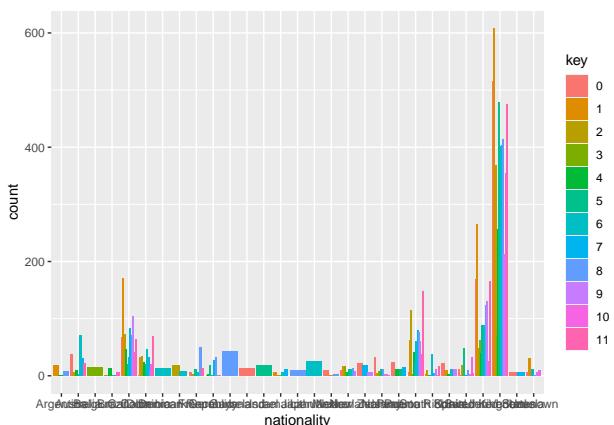


[1] "Chi-square test for nationality and explicit"

Pearson's Chi-squared test

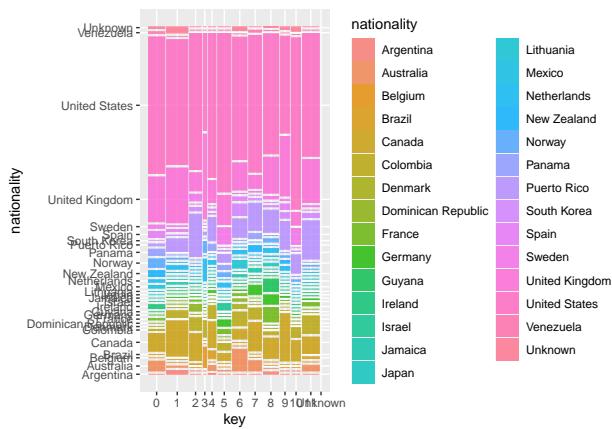
```
data: table(cat_var1, cat_var2)
X-squared = 1601.6, df = 28, p-value < 2.2e-16
```

[1] "nationality and key"



	0	1	2	3	4	5	6	7	8	9	10	11	Unknown
Argentina	0	18	0	0	1	0	0	0	8	0	0	0	0
Australia	37	6	0	0	9	2	71	30	0	0	0	22	0
Belgium	0	0	0	15	0	0	0	0	0	0	0	0	0
Brazil	0	0	1	0	14	0	1	0	0	0	0	7	0
Canada	67	171	73	0	46	21	32	84	71	104	42	64	0
Colombia	1	33	34	12	23	20	46	33	10	0	20	69	0
Denmark	0	0	0	0	0	0	13	0	0	0	0	0	0
Dominican Republic	0	0	18	0	0	0	8	0	0	0	0	0	0
France	6	0	3	0	0	12	6	0	50	0	0	13	0
Germany	0	1	0	0	3	19	1	28	32	1	0	1	0
Guyana	0	0	0	0	0	0	0	0	43	0	0	0	0
Ireland	14	0	0	0	0	0	0	0	0	0	0	0	0
Israel	0	0	0	0	0	19	0	0	0	0	0	0	0
Jamaica	0	7	1	0	0	0	7	11	0	0	0	0	0
Japan	0	0	0	0	0	0	0	0	9	0	0	0	0
Lithuania	0	0	0	0	0	0	25	0	0	0	0	0	0
Mexico	10	1	0	0	0	0	0	0	2	0	0	0	0
Netherlands	9	17	0	16	7	12	11	0	14	8	0	0	0
New Zealand	22	0	0	0	0	0	0	19	0	6	0	0	0
Norway	32	4	0	8	0	11	0	0	11	3	3	1	0
Panama	24	0	0	0	11	12	0	15	0	0	0	0	0
Puerto Rico	7	62	115	2	42	24	60	80	76	61	38	148	0
South Korea	0	3	9	0	1	1	38	4	4	12	1	16	0
Spain	22	10	0	0	2	0	12	0	0	12	0	0	0
Sweden	12	1	18	0	0	49	1	1	9	3	33	4	0
United Kingdom	169	266	49	62	39	88	89	38	124	131	26	166	0
United States	516	608	368	71	257	478	401	404	414	213	354	476	0
Venezuela	7	0	0	0	0	0	0	6	0	0	0	0	0
Unknown	6	30	0	0	0	0	12	0	1	6	9	0	0

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

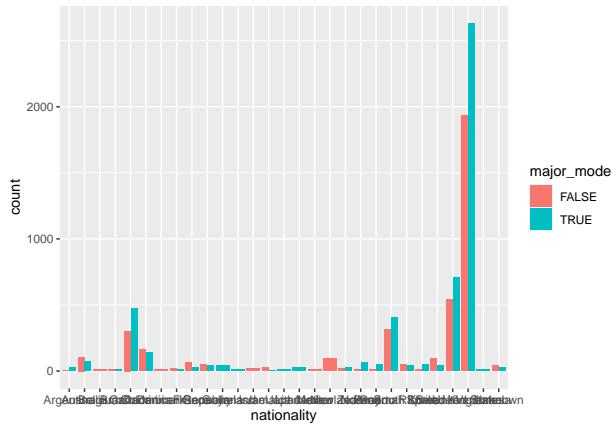


[1] "Chi-square test for nationality and key"

Pearson's Chi-squared test

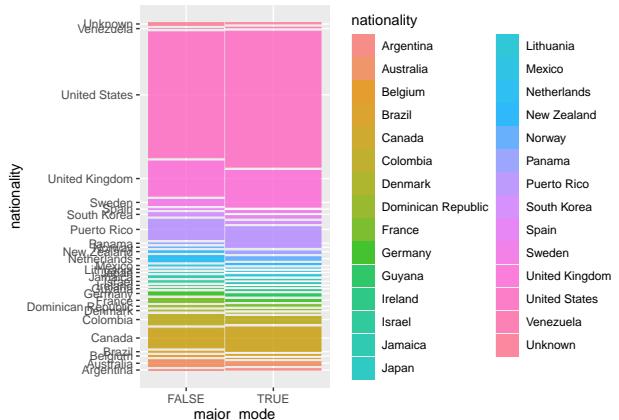
```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 336, p-value = NA
```

```
[1] "nationality and major_mode"
```



	FALSE	TRUE
Argentina	1	26
Australia	106	71
Belgium	15	0
Brazil	15	8
Canada	303	472
Colombia	162	139
Denmark	13	0
Dominican Republic	18	8
France	62	28
Germany	46	40
Guyana	0	43
Ireland	0	14
Israel	19	0
Jamaica	25	1
Japan	0	9
Lithuania	0	25
Mexico	13	0
Netherlands	94	0
New Zealand	22	25
Norway	9	64
Panama	12	50
Puerto Rico	312	403
South Korea	48	41
Spain	12	46
Sweden	92	39
United Kingdom	538	709
United States	1931	2629
Venezuela	0	13
Unknown	40	24

```
Warning in chisq.test(table(cat_var1, cat_var2), correct = FALSE): Chi-squared approximation may be incorrect
```

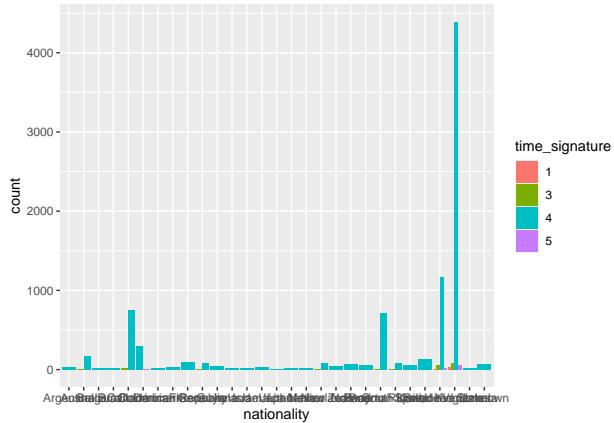


```
[1] "Chi-square test for nationality and major_mode"
```

Pearson's Chi-squared test

```
data: table(cat_var1, cat_var2)
X-squared = 510.05, df = 28, p-value < 2.2e-16
```

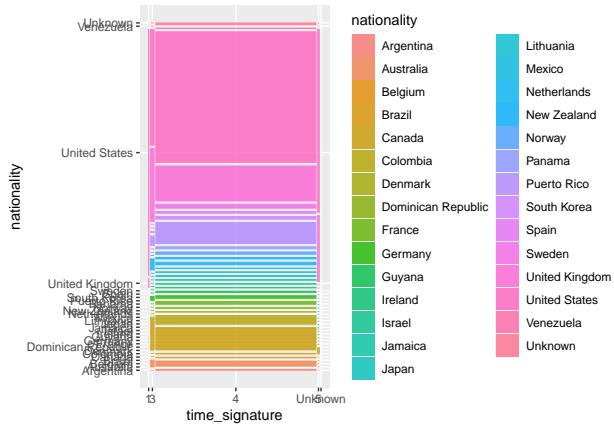
```
[1] "nationality and time_signature"
```



	1	3	4	5	Unknown
Argentina	0	0	27	0	0
Australia	0	5	172	0	0
Belgium	0	0	15	0	0
Brazil	0	0	23	0	0
Canada	0	24	751	0	0
Colombia	0	0	299	2	0
Denmark	0	0	13	0	0
Dominican Republic	0	0	26	0	0
France	0	0	90	0	0
Germany	0	3	83	0	0
Guyana	0	0	43	0	0
Ireland	0	0	14	0	0
Israel	0	0	19	0	0
Jamaica	0	0	26	0	0
Japan	0	0	9	0	0

Lithuania	0	0	25	0	0
Mexico	0	0	13	0	0
Netherlands	0	8	86	0	0
New Zealand	0	0	47	0	0
Norway	0	0	73	0	0
Panama	0	0	62	0	0
Puerto Rico	0	7	708	0	0
South Korea	0	1	88	0	0
Spain	0	0	58	0	0
Sweden	0	0	131	0	0
United Kingdom	1	53	1171	22	0
United States	29	84	4386	61	0
Venezuela	0	0	13	0	0
Unknown	0	0	64	0	0

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

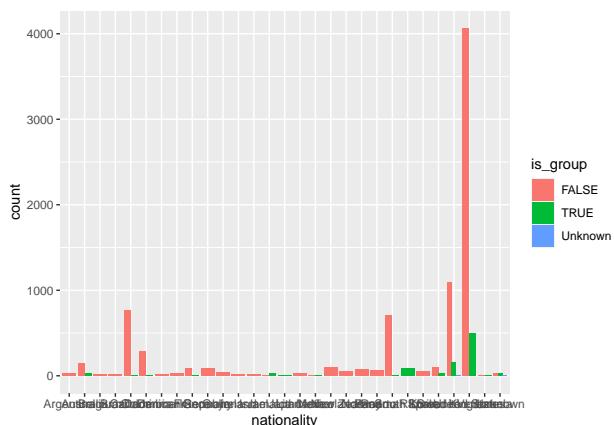


[1] "Chi-square test for nationality and time\_signature"

Pearson's Chi-squared test

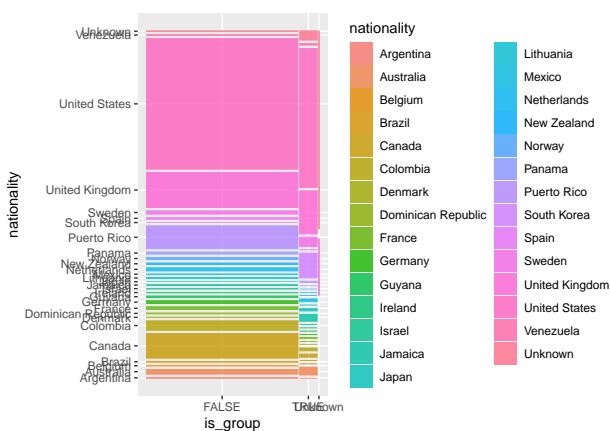
```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 112, p-value = NA
```

[1] "nationality and is\_group"



	FALSE	TRUE	Unknown
Argentina	27	0	0
Australia	149	28	0
Belgium	15	0	0
Brazil	23	0	0
Canada	764	11	0
Colombia	291	10	0
Denmark	13	0	0
Dominican Republic	26	0	0
France	89	1	0
Germany	86	0	0
Guyana	43	0	0
Ireland	14	0	0
Israel	19	0	0
Jamaica	1	25	0
Japan	0	9	0
Lithuania	25	0	0
Mexico	3	10	0
Netherlands	94	0	0
New Zealand	47	0	0
Norway	73	0	0
Panama	62	0	0
Puerto Rico	711	4	0
South Korea	0	89	0
Spain	58	0	0
Sweden	98	33	0
United Kingdom	1091	154	2
United States	4063	497	0
Venezuela	7	6	0
Unknown	24	33	7

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

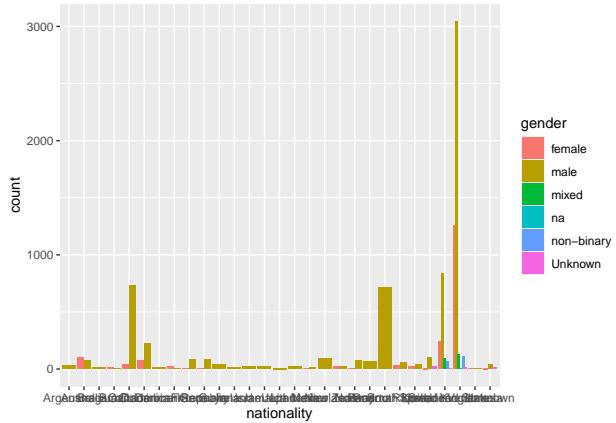


[1] "Chi-square test for nationality and is\_group"

Pearson's Chi-squared test

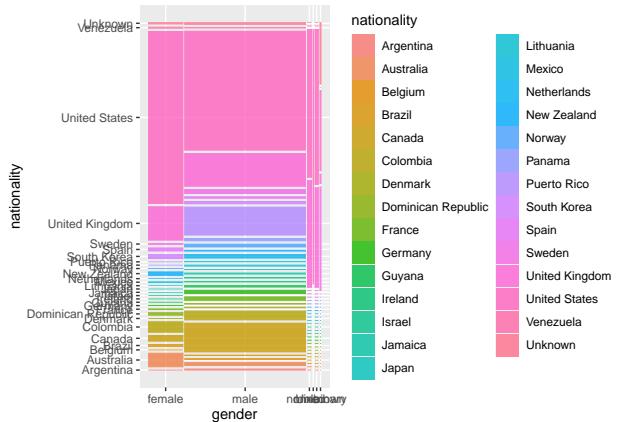
```
data: table(cat_var1, cat_var2)
X-squared = 2292.8, df = 56, p-value < 2.2e-16
```

[1] "nationality and gender"



	female	male	mixed	na	non-binary	Unknown
Argentina	0	27	0	0	0	0
Australia	99	78	0	0	0	0
Belgium	0	15	0	0	0	0
Brazil	16	7	0	0	0	0
Canada	41	734	0	0	0	0
Colombia	76	225	0	0	0	0
Denmark	0	13	0	0	0	0
Dominican Republic	18	8	0	0	0	0
France	3	87	0	0	0	0
Germany	1	85	0	0	0	0
Guyana	0	43	0	0	0	0
Ireland	0	14	0	0	0	0
Israel	0	19	0	0	0	0
Jamaica	0	26	0	0	0	0
Japan	0	9	0	0	0	0
Lithuania	0	25	0	0	0	0
Mexico	3	10	0	0	0	0
Netherlands	0	94	0	0	0	0
New Zealand	25	22	0	0	0	0
Norway	1	72	0	0	0	0
Panama	0	62	0	0	0	0
Puerto Rico	0	715	0	0	0	0
South Korea	31	58	0	0	0	0
Spain	22	36	0	0	0	0
Sweden	9	100	0	0	0	22
United Kingdom	244	840	93	0	68	2
United States	1258	3042	129	8	106	17
Venezuela	7	6	0	0	0	0
Unknown	9	42	0	0	0	13

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect

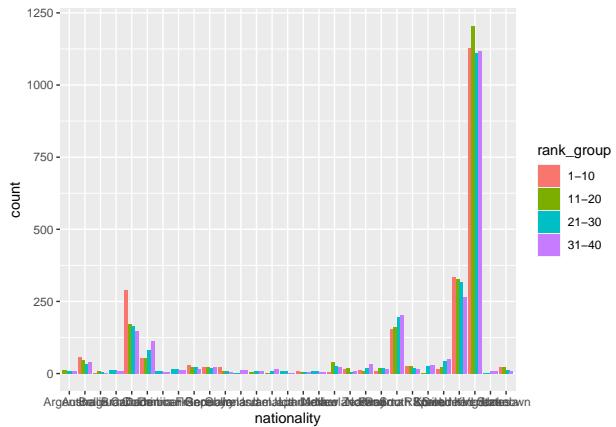


[1] "Chi-square test for nationality and gender"

Pearson's Chi-squared test

```
data: table(cat_var1, cat_var2)
X-squared = 2254.2, df = 140, p-value < 2.2e-16
```

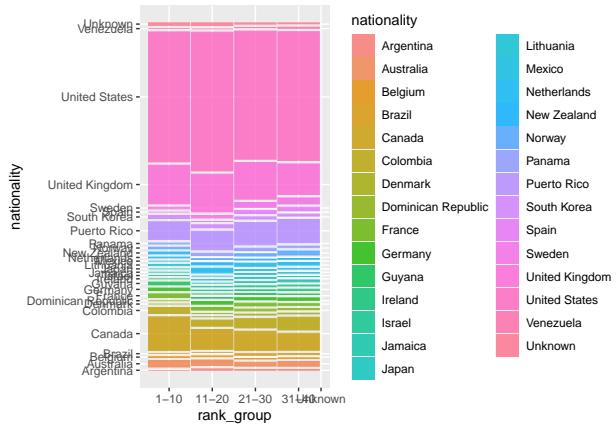
[1] "nationality and rank\_group"



	1-10	11-20	21-30	31-40	Unknown
Argentina	0	12	8	7	0
Australia	56	48	33	40	0
Belgium	2	7	4	2	0
Brazil	0	0	13	10	0
Canada	290	172	166	147	0
Colombia	54	53	83	111	0
Denmark	0	0	7	6	0
Dominican Republic	0	0	15	11	0
France	30	23	23	14	0
Germany	22	24	19	21	0
Guyana	23	7	8	5	0
Ireland	0	0	1	13	0
Israel	0	5	7	7	0
Jamaica	0	2	8	16	0
Japan	0	0	7	2	0

Lithuania	10	4	5	6	0
Mexico	0	0	7	6	0
Netherlands	6	40	26	22	0
New Zealand	15	18	6	8	0
Norway	13	7	19	34	0
Panama	8	20	20	14	0
Puerto Rico	155	162	195	203	0
South Korea	27	26	19	17	0
Spain	0	2	25	31	0
Sweden	14	23	42	52	0
United Kingdom	335	328	318	266	0
United States	1127	1204	1111	1118	0
Venezuela	0	0	3	10	0
Unknown	21	23	11	9	0

Warning in chisq.test(table(cat\_var1, cat\_var2), correct = FALSE): Chi-squared approximation may be incorrect



[1] "Chi-square test for nationality and rank\_group"

Pearson's Chi-squared test

```
data: table(cat_var1, cat_var2)
X-squared = NaN, df = 112, p-value = NA
```