Multiple t-tests over columns

Asked 6 months ago Active 6 months ago Viewed 23 times

I'm still very novice to R.

```
data.frame(treatment = c("D", "E", "F", "G"), group = c(rep(c("A", "B"), each = 4)),
           effect = c(1, 4, 5, 6, 8, 9, 10, 11))
```

```
    treatment group effect
1         D     A      1
2         E     A      4
3         F     A      5
4         G     A      6
5         D     B      8
6         E     B      9
7         F     B     10
8         G     B     11
```

For every entry in treatment I'd like to use the t-test to see whether there was a statistically significant difference in effect for the two groups.

Many thanks!

r lapply t-test Edit tags

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asked Feb 27 at 0:44

Thapeachydude

1

1 You only have one observation for each effect for a given treatment. Can't do a `t.test` with that data. Am I missing something? – George Feb 27 at 1:34

1 Answer

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Using `by` .

```
by(d, d$treatment, function(x) with(x, t.test(effect ~ group)))
# d$treatment: A
#
# Welch Two Sample t-test
#
# data:  effect by group
# t = -1.941, df = 2.6904, p-value = 0.1581
# alternative hypothesis: true difference in means is not equal to 0
# 95 percent confidence interval:
#   -16.510018   4.510018
# sample estimates:
```

```
#   mean in group A mean in group B
# 4.333333       10.333333
#
# ------------------------------------------------------------
#   d$treatment: B
#
# Welch Two Sample t-test
#
# data:  effect by group
# t = -3.1623, df = 3.4483, p-value = 0.04191
# alternative hypothesis: true difference in means is not equal to 0
# 95 percent confidence interval:
#   -6.4542173 -0.2124494
# sample estimates:
#   mean in group A mean in group B
# 4.000000        7.333333
```

Data:

I made new example data since yours appears to be flawed.

```
d <- structure(list(treatment = c("A", "B", "A", "B", "A", "B", "A",
"B", "A", "B", "A", "B"), group = c("A", "A", "B", "B", "A",
"A", "B", "B", "A", "A", "B", "B"), effect = c(1L, 5L, 12L, 9L,
2L, 4L, 8L, 6L, 10L, 3L, 11L, 7L)), out.attrs = list(dim = c(treatment = 2L,
group = 2L, id = 3L), dimnames = list(treatment = c("treatment=A",
"treatment=B"), group = c("group=A", "group=B"), id = c("id=1",
"id=2", "id=3"))), row.names = c(NA, -12L), class = "data.frame")

d
#    treatment group effect
# 1          A     A      1
# 2          B     A      5
# 3          A     B     12
# 4          B     B      9
# 5          A     A      2
# 6          B     A      4
# 7          A     B      8
# 8          B     B      6
# 9          A     A     10
# 10         B     A      3
# 11         A     B     11
# 12         B     B      7
```

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answered Feb 27 at 6:27

jay.sf

35.1k 5 41 80