Sample size

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The sample size you need is 154

Detail

This code is for calculating sample size of linear model.(R language)

```
pacman::p_load(pwr)
pwr.f2.test(u = 5, f2 = 0.1/(1 - 0.1), sig.level = 0.05, power = 0.9)
```

```
     Multiple regression power calculation

              u = 5
              v = 147.8645
             f2 = 0.1111111
      sig.level = 0.05
          power = 0.9
```

u: is the number of coefficients you'll have in your model except intercept.

f2: is proportion of variance explained and.

$$f_2 = \frac{R^2}{1 - R^2}$$

sig.level: is significance level.

power: is power.

Calculate the sample size

The sample size n:

$$n = v + u + 1$$

Hence the sample size you need is

$$n = 148 + 5 + 1 = 154$$