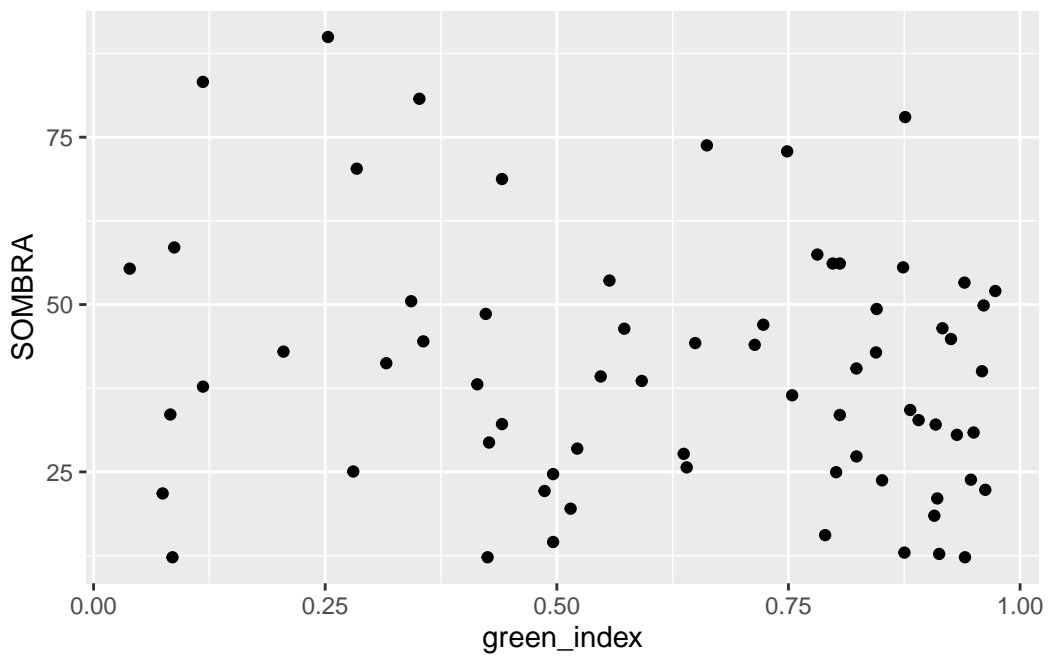
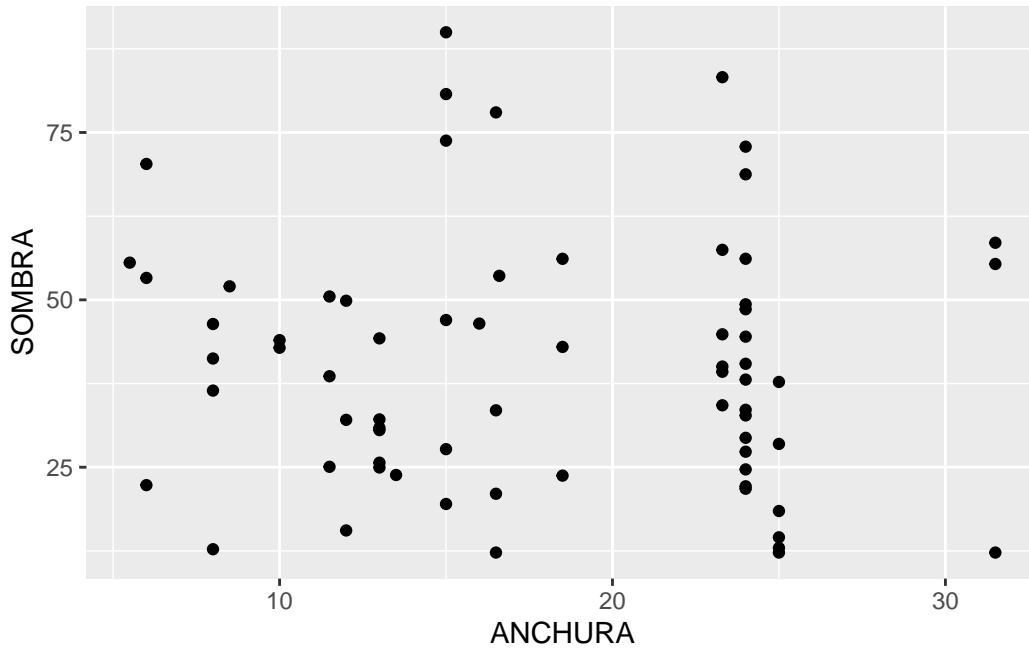


# Modelo sombra

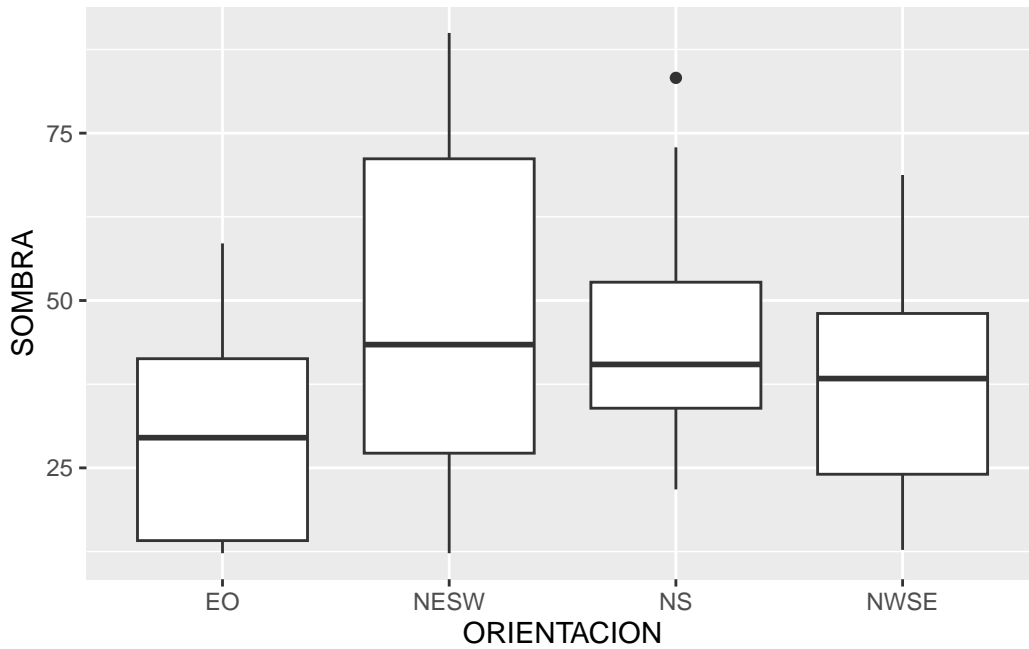
```
datos <- readxl::read_excel(" analisis_medio.xlsx")  
  
library(ggplot2)  
  
ggplot(datos) +  
  geom_point(aes(green_index, SOMBRA))
```



```
ggplot(datos) +  
  geom_point(aes(ANCHURA, SOMBRA))
```



```
ggplot(datos) +  
  geom_boxplot(aes(ORIENTACION, SOMBRA))
```



```
mod <- lm(SOMBRA ~ ANCHURA + ORIENTACION + green_index, data = datos)
summary(mod)
```

Call:

```
lm(formula = SOMBRA ~ ANCHURA + ORIENTACION + green_index, data = datos)
```

Residuals:

Min	1Q	Median	3Q	Max
-32.980	-14.142	-1.283	13.421	36.288

Coefficients:

	Estimate	Std. Error	t value	Pr(> t )	
(Intercept)	49.5025	13.5781	3.646	0.000542	***
ANCHURA	-0.4163	0.4352	-0.957	0.342470	
ORIENTACIONNESW	14.9190	7.8065	1.911	0.060543	.
ORIENTACIONNS	16.5761	6.9415	2.388	0.019953	*
ORIENTACIONNWSE	5.6706	7.0601	0.803	0.424881	
green_index	-17.7682	8.3725	-2.122	0.037758	*

---

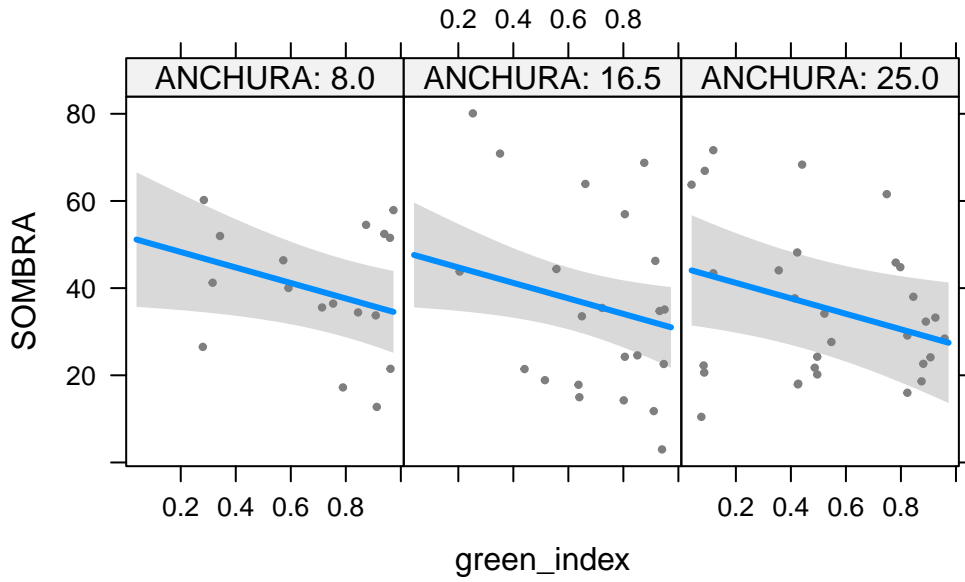
Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 17.79 on 63 degrees of freedom

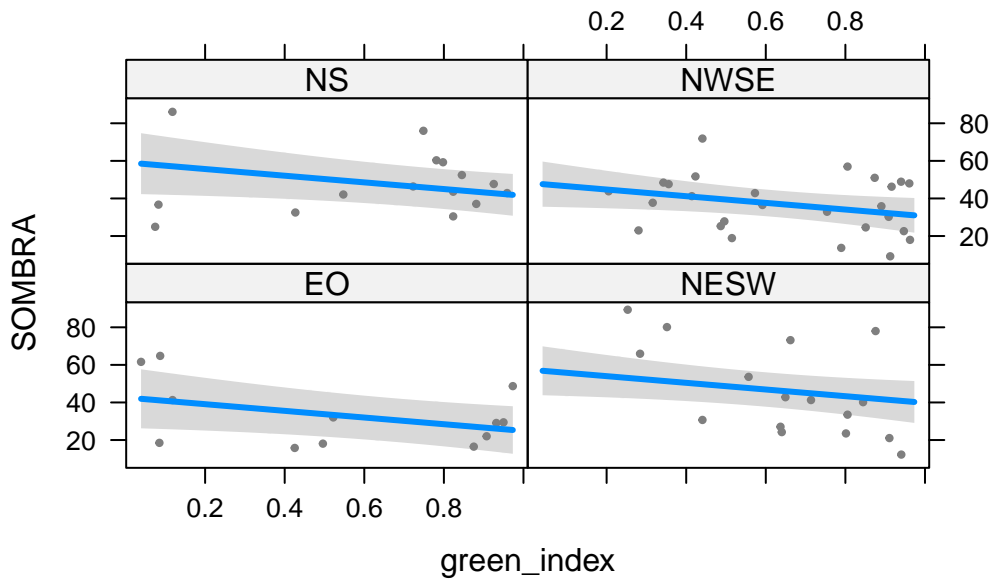
Multiple R-squared: 0.1653, Adjusted R-squared: 0.09904

F-statistic: 2.495 on 5 and 63 DF, p-value: 0.03997

```
library(visreg)
visreg(mod, xvar = "green_index", by = "ANCHURA")
```



```
visreg(mod, xvar = "green_index", by = "ORIENTACION")
```



```
mod2 <- lm(SOMBRA ~ ANCHURA * ORIENTACION * green_index, data = datos)
summary(mod2)
```

Call:

```
lm(formula = SOMBRA ~ ANCHURA * ORIENTACION * green_index, data = datos)
```

Residuals:

Min	1Q	Median	3Q	Max
-29.430	-10.317	0.413	8.301	44.812

Coefficients:

	Estimate	Std. Error	t value	Pr(> t )
(Intercept)	-16.0506	81.7432	-0.196	0.84508
ANCHURA	1.9713	2.7495	0.717	0.47656
ORIENTACIONNESW	91.4829	93.6973	0.976	0.33332
ORIENTACIONNS	1939.4229	704.7188	2.752	0.00809 **
ORIENTACIONNWSE	48.4454	85.6698	0.565	0.57413
green_index	82.4889	84.3810	0.978	0.33272
ANCHURA:ORIENTACIONNESW	-0.6414	4.3579	-0.147	0.88354
ANCHURA:ORIENTACIONNS	-81.0689	29.5824	-2.740	0.00834 **
ANCHURA:ORIENTACIONNWSE	-1.2796	3.1282	-0.409	0.68415
ANCHURA:green_index	-4.2455	2.7990	-1.517	0.13525
ORIENTACIONNESW:green_index	-146.4013	115.5705	-1.267	0.21078
ORIENTACIONNS:green_index	-2675.2918	973.6851	-2.748	0.00819 **
ORIENTACIONNWSE:green_index	-75.7363	91.2822	-0.830	0.41043
ANCHURA:ORIENTACIONNESW:green_index	3.6781	6.1851	0.595	0.55459
ANCHURA:ORIENTACIONNS:green_index	113.5468	40.9582	2.772	0.00766 **
ANCHURA:ORIENTACIONNWSE:green_index	3.1736	3.5949	0.883	0.38134

---

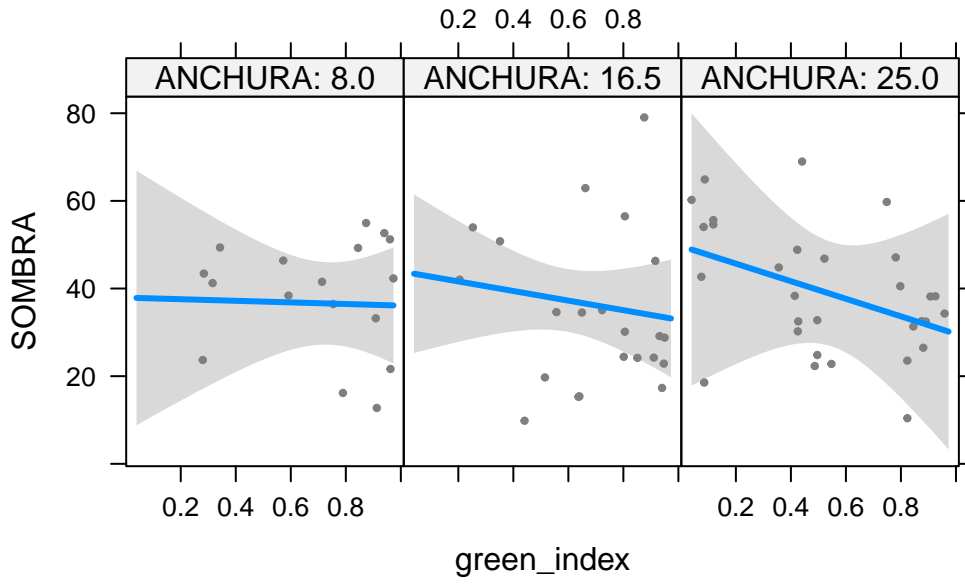
Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 16.39 on 53 degrees of freedom

Multiple R-squared: 0.404, Adjusted R-squared: 0.2353

F-statistic: 2.395 on 15 and 53 DF, p-value: 0.01004

```
visreg(mod2, xvar = "green_index", by = "ANCHURA")
```



```
visreg(mod2, xvar = "green_index", by = "ORIENTACION")
```

