prueba

## Summary

## Introducction

# Quarto

Quarto enables you to weave together content and executable code into a finished document. To learn more about Quarto see <https://quarto.org>.

### Running Code

When you click the **Render** button a document will be generated that includes both content and the output of embedded code. You can embed code like this:

1 + 1

[1] 2

You can add options to executable code like this

── Attaching core tidyverse packages ──────────────────────── tidyverse 2.0.0 ──  
✔ dplyr 1.1.4 ✔ readr 2.1.5  
✔ forcats 1.0.0 ✔ stringr 1.5.1  
✔ ggplot2 3.5.1 ✔ tibble 3.2.1  
✔ lubridate 1.9.3 ✔ tidyr 1.3.1  
✔ purrr 1.0.2   
── Conflicts ────────────────────────────────────────── tidyverse\_conflicts() ──  
✖ dplyr::filter() masks stats::filter()  
✖ dplyr::lag() masks stats::lag()  
ℹ Use the conflicted package (<http://conflicted.r-lib.org/>) to force all conflicts to become errors  
Welcome to emmeans.  
Caution: You lose important information if you filter this package's results.  
See '? untidy'  
  
Cargando paquete requerido: carData  
  
  
Adjuntando el paquete: 'car'  
  
  
The following object is masked from 'package:dplyr':  
  
 recode  
  
  
The following object is masked from 'package:purrr':  
  
 some  
  
  
Cargando paquete requerido: mvtnorm  
  
Cargando paquete requerido: survival  
  
Cargando paquete requerido: TH.data  
  
Cargando paquete requerido: MASS  
  
  
Adjuntando el paquete: 'MASS'  
  
  
The following object is masked from 'package:dplyr':  
  
 select  
  
  
  
Adjuntando el paquete: 'TH.data'  
  
  
The following object is masked from 'package:MASS':  
  
 geyser

Site sector ID Treatment   
 Length:180 Min. :1 Min. :157.0 Length:180   
 Class :character 1st Qu.:1 1st Qu.:247.0 Class :character   
 Mode :character Median :2 Median :321.5 Mode :character   
 Mean :2 Mean :323.0   
 3rd Qu.:3 3rd Qu.:360.0   
 Max. :3 Max. :797.0   
 Woody Dicotyledonous Monocotyledonous Fern   
 Min. :0.001000 Min. :0.009804 Min. :0.05952 Min. :0.00100   
 1st Qu.:0.001000 1st Qu.:0.330845 1st Qu.:0.25679 1st Qu.:0.00100   
 Median :0.001000 Median :0.443110 Median :0.34199 Median :0.08794   
 Mean :0.013162 Mean :0.443302 Mean :0.34488 Mean :0.15299   
 3rd Qu.:0.009174 3rd Qu.:0.563856 3rd Qu.:0.43688 3rd Qu.:0.25205   
 Max. :0.195804 Max. :0.815603 Max. :0.68687 Max. :0.76190   
 Native Exotic Total   
 Min. :0.007246 Min. :0.02941 Min. :0.5566   
 1st Qu.:0.285004 1st Qu.:0.40095 1st Qu.:0.9408   
 Median :0.416809 Median :0.52848 Median :0.9712   
 Mean :0.426322 Mean :0.52705 Mean :0.9538   
 3rd Qu.:0.575301 3rd Qu.:0.67527 3rd Qu.:0.9990   
 Max. :0.931373 Max. :0.99275 Max. :0.9990

tibble [180 × 11] (S3: tbl\_df/tbl/data.frame)  
 $ Site : chr [1:180] "High" "High" "High" "High" ...  
 $ sector : num [1:180] 3 3 3 3 1 1 3 3 2 2 ...  
 $ ID : num [1:180] 157 157 164 164 165 165 179 179 186 186 ...  
 $ Treatment : chr [1:180] "(-)F(-)S" "(-)F(+)S" "(+)F(-)S" "(+)F(+)S" ...  
 $ Woody : num [1:180] 0.001 0.0387 0.001 0.001 0.001 ...  
 $ Dicotyledonous : num [1:180] 0.189 0.471 0.573 0.579 0.429 ...  
 $ Monocotyledonous: num [1:180] 0.516 0.49 0.382 0.414 0.374 ...  
 $ Fern : num [1:180] 0.001 0.001 0.001 0.001 0.001 ...  
 $ Native : num [1:180] 0.2316 0.3355 0.2137 0.4539 0.0659 ...  
 $ Exotic : num [1:180] 0.474 0.665 0.74 0.539 0.736 ...  
 $ Total : num [1:180] 0.707 0.999 0.956 0.995 0.804 ...

Analysis of Deviance Table (Type II Wald chisquare tests)  
  
Response: Total  
 Chisq Df Pr(>Chisq)   
Site 57.514 2 3.244e-13 \*\*\*  
Treatment 67.035 3 1.840e-14 \*\*\*  
Site:Treatment 24.601 6 0.0004047 \*\*\*  
---  
Signif. codes: 0 '\*\*\*' 0.001 '\*\*' 0.01 '\*' 0.05 '.' 0.1 ' ' 1

NOTE: Results may be misleading due to involvement in interactions

$`emmeans of Site`  
 Site response SE df asymp.LCL asymp.UCL  
 High 0.938 0.00629 Inf 0.924 0.949  
 Low 0.972 0.00367 Inf 0.964 0.978  
 Medium 0.972 0.00365 Inf 0.964 0.978  
  
Results are averaged over the levels of: Treatment   
Confidence level used: 0.95   
Intervals are back-transformed from the logit scale   
  
$`pairwise differences of Site`  
 1 odds.ratio SE df null z.ratio p.value  
 High / Low 0.440 0.0677 Inf 1 -5.337 <.0001  
 High / Medium 0.434 0.0670 Inf 1 -5.410 <.0001  
 Low / Medium 0.985 0.1610 Inf 1 -0.092 0.9954  
  
Results are averaged over the levels of: Treatment   
P value adjustment: tukey method for comparing a family of 3 estimates   
Tests are performed on the log odds ratio scale

NOTE: Results may be misleading due to involvement in interactions

Site emmean SE df asymp.LCL asymp.UCL .group  
 High 2.71 0.108 Inf 2.50 2.93 1   
 Low 3.53 0.133 Inf 3.27 3.80 2   
 Medium 3.55 0.134 Inf 3.29 3.81 2   
  
Results are averaged over the levels of: Treatment   
Results are given on the logit (not the response) scale.   
Confidence level used: 0.95   
Results are given on the log odds ratio (not the response) scale.   
P value adjustment: tukey method for comparing a family of 3 estimates   
significance level used: alpha = 0.05   
NOTE: If two or more means share the same grouping symbol,  
 then we cannot show them to be different.  
 But we also did not show them to be the same.

$`emmeans of Site, Treatment`  
 Site Treatment response SE df asymp.LCL asymp.UCL  
 High (-)F(-)S 0.820 0.02070 Inf 0.776 0.857  
 Low (-)F(-)S 0.952 0.00976 Inf 0.929 0.968  
 Medium (-)F(-)S 0.968 0.00739 Inf 0.949 0.979  
 High (-)F(+)S 0.964 0.00800 Inf 0.944 0.977  
 Low (-)F(+)S 0.973 0.00644 Inf 0.957 0.983  
 Medium (-)F(+)S 0.971 0.00673 Inf 0.955 0.982  
 High (+)F(-)S 0.916 0.01400 Inf 0.884 0.940  
 Low (+)F(-)S 0.971 0.00680 Inf 0.954 0.982  
 Medium (+)F(-)S 0.968 0.00737 Inf 0.950 0.979  
 High (+)F(+)S 0.975 0.00599 Inf 0.960 0.985  
 Low (+)F(+)S 0.983 0.00432 Inf 0.972 0.990  
 Medium (+)F(+)S 0.980 0.00501 Inf 0.967 0.988  
  
Confidence level used: 0.95   
Intervals are back-transformed from the logit scale   
  
$`pairwise differences of Site, Treatment`  
 1 odds.ratio SE df null z.ratio  
 (High (-)F(-)S) / (Low (-)F(-)S) 0.2285 0.0580 Inf 1 -5.814  
 (High (-)F(-)S) / (Medium (-)F(-)S) 0.1529 0.0414 Inf 1 -6.934  
 (High (-)F(-)S) / (High (-)F(+)S) 0.1706 0.0454 Inf 1 -6.639  
 (High (-)F(-)S) / (Low (-)F(+)S) 0.1274 0.0354 Inf 1 -7.421  
 (High (-)F(-)S) / (Medium (-)F(+)S) 0.1349 0.0372 Inf 1 -7.269  
 (High (-)F(-)S) / (High (+)F(-)S) 0.4181 0.0951 Inf 1 -3.833  
 (High (-)F(-)S) / (Low (+)F(-)S) 0.1369 0.0376 Inf 1 -7.231  
 (High (-)F(-)S) / (Medium (+)F(-)S) 0.1524 0.0413 Inf 1 -6.944  
 (High (-)F(-)S) / (High (+)F(+)S) 0.1161 0.0326 Inf 1 -7.666  
 (High (-)F(-)S) / (Low (+)F(+)S) 0.0781 0.0228 Inf 1 -8.721  
 (High (-)F(-)S) / (Medium (+)F(+)S) 0.0932 0.0268 Inf 1 -8.250  
 (Low (-)F(-)S) / (Medium (-)F(-)S) 0.6694 0.2070 Inf 1 -1.300  
 (Low (-)F(-)S) / (High (-)F(+)S) 0.7466 0.2280 Inf 1 -0.957  
 (Low (-)F(-)S) / (Low (-)F(+)S) 0.5576 0.1750 Inf 1 -1.860  
 (Low (-)F(-)S) / (Medium (-)F(+)S) 0.5905 0.1850 Inf 1 -1.686  
 (Low (-)F(-)S) / (High (+)F(-)S) 1.8298 0.5050 Inf 1 2.190  
 (Low (-)F(-)S) / (Low (+)F(-)S) 0.5990 0.1870 Inf 1 -1.642  
 (Low (-)F(-)S) / (Medium (+)F(-)S) 0.6671 0.2060 Inf 1 -1.311  
 (Low (-)F(-)S) / (High (+)F(+)S) 0.5083 0.1610 Inf 1 -2.138  
 (Low (-)F(-)S) / (Low (+)F(+)S) 0.3418 0.1110 Inf 1 -3.299  
 (Low (-)F(-)S) / (Medium (+)F(+)S) 0.4078 0.1310 Inf 1 -2.788  
 (Medium (-)F(-)S) / (High (-)F(+)S) 1.1153 0.3540 Inf 1 0.344  
 (Medium (-)F(-)S) / (Low (-)F(+)S) 0.8330 0.2710 Inf 1 -0.562  
 (Medium (-)F(-)S) / (Medium (-)F(+)S) 0.8822 0.2860 Inf 1 -0.387  
 (Medium (-)F(-)S) / (High (+)F(-)S) 2.7334 0.7940 Inf 1 3.460  
 (Medium (-)F(-)S) / (Low (+)F(-)S) 0.8948 0.2890 Inf 1 -0.344  
 (Medium (-)F(-)S) / (Medium (+)F(-)S) 0.9965 0.3200 Inf 1 -0.011  
 (Medium (-)F(-)S) / (High (+)F(+)S) 0.7594 0.2490 Inf 1 -0.840  
 (Medium (-)F(-)S) / (Low (+)F(+)S) 0.5107 0.1710 Inf 1 -2.003  
 (Medium (-)F(-)S) / (Medium (+)F(+)S) 0.6091 0.2020 Inf 1 -1.491  
 (High (-)F(+)S) / (Low (-)F(+)S) 0.7469 0.2410 Inf 1 -0.905  
 (High (-)F(+)S) / (Medium (-)F(+)S) 0.7910 0.2540 Inf 1 -0.731  
 (High (-)F(+)S) / (High (+)F(-)S) 2.4509 0.7030 Inf 1 3.126  
 (High (-)F(+)S) / (Low (+)F(-)S) 0.8023 0.2570 Inf 1 -0.687  
 (High (-)F(+)S) / (Medium (+)F(-)S) 0.8935 0.2840 Inf 1 -0.354  
 (High (-)F(+)S) / (High (+)F(+)S) 0.6809 0.2210 Inf 1 -1.184  
 (High (-)F(+)S) / (Low (+)F(+)S) 0.4579 0.1520 Inf 1 -2.346  
 (High (-)F(+)S) / (Medium (+)F(+)S) 0.5462 0.1800 Inf 1 -1.835  
 (Low (-)F(+)S) / (Medium (-)F(+)S) 1.0590 0.3480 Inf 1 0.175  
 (Low (-)F(+)S) / (High (+)F(-)S) 3.2814 0.9730 Inf 1 4.006  
 (Low (-)F(+)S) / (Low (+)F(-)S) 1.0742 0.3530 Inf 1 0.218  
 (Low (-)F(+)S) / (Medium (+)F(-)S) 1.1963 0.3890 Inf 1 0.551  
 (Low (-)F(+)S) / (High (+)F(+)S) 0.9116 0.3030 Inf 1 -0.279  
 (Low (-)F(+)S) / (Low (+)F(+)S) 0.6130 0.2080 Inf 1 -1.440  
 (Low (-)F(+)S) / (Medium (+)F(+)S) 0.7313 0.2460 Inf 1 -0.930  
 (Medium (-)F(+)S) / (High (+)F(-)S) 3.0985 0.9130 Inf 1 3.836  
 (Medium (-)F(+)S) / (Low (+)F(-)S) 1.0143 0.3310 Inf 1 0.043  
 (Medium (-)F(+)S) / (Medium (+)F(-)S) 1.1296 0.3660 Inf 1 0.376  
 (Medium (-)F(+)S) / (High (+)F(+)S) 0.8608 0.2850 Inf 1 -0.453  
 (Medium (-)F(+)S) / (Low (+)F(+)S) 0.5789 0.1960 Inf 1 -1.615  
 (Medium (-)F(+)S) / (Medium (+)F(+)S) 0.6905 0.2320 Inf 1 -1.104  
 (High (+)F(-)S) / (Low (+)F(-)S) 0.3274 0.0963 Inf 1 -3.794  
 (High (+)F(-)S) / (Medium (+)F(-)S) 0.3646 0.1060 Inf 1 -3.471  
 (High (+)F(-)S) / (High (+)F(+)S) 0.2778 0.0832 Inf 1 -4.277  
 (High (+)F(-)S) / (Low (+)F(+)S) 0.1868 0.0578 Inf 1 -5.419  
 (High (+)F(-)S) / (Medium (+)F(+)S) 0.2228 0.0681 Inf 1 -4.915  
 (Low (+)F(-)S) / (Medium (+)F(-)S) 1.1137 0.3600 Inf 1 0.333  
 (Low (+)F(-)S) / (High (+)F(+)S) 0.8486 0.2800 Inf 1 -0.497  
 (Low (+)F(-)S) / (Low (+)F(+)S) 0.5707 0.1930 Inf 1 -1.659  
 (Low (+)F(-)S) / (Medium (+)F(+)S) 0.6808 0.2280 Inf 1 -1.148  
 (Medium (+)F(-)S) / (High (+)F(+)S) 0.7620 0.2500 Inf 1 -0.829  
 (Medium (+)F(-)S) / (Low (+)F(+)S) 0.5124 0.1720 Inf 1 -1.992  
 (Medium (+)F(-)S) / (Medium (+)F(+)S) 0.6113 0.2030 Inf 1 -1.481  
 (High (+)F(+)S) / (Low (+)F(+)S) 0.6725 0.2300 Inf 1 -1.161  
 (High (+)F(+)S) / (Medium (+)F(+)S) 0.8022 0.2720 Inf 1 -0.651  
 (Low (+)F(+)S) / (Medium (+)F(+)S) 1.1928 0.4120 Inf 1 0.510  
 p.value  
 <.0001  
 <.0001  
 <.0001  
 <.0001  
 <.0001  
 0.0071  
 <.0001  
 <.0001  
 <.0001  
 <.0001  
 <.0001  
 0.9794  
 0.9985  
 0.7842  
 0.8751  
 0.5566  
 0.8934  
 0.9780  
 0.5954  
 0.0454  
 0.1851  
 1.0000  
 1.0000  
 1.0000  
 0.0269  
 1.0000  
 1.0000  
 0.9995  
 0.6919  
 0.9433  
 0.9991  
 0.9999  
 0.0763  
 0.9999  
 1.0000  
 0.9903  
 0.4434  
 0.7989  
 1.0000  
 0.0036  
 1.0000  
 1.0000  
 1.0000  
 0.9556  
 0.9988  
 0.0070  
 1.0000  
 1.0000  
 1.0000  
 0.9040  
 0.9946  
 0.0082  
 0.0260  
 0.0011  
 <.0001  
 0.0001  
 1.0000  
 1.0000  
 0.8868  
 0.9925  
 0.9996  
 0.6994  
 0.9461  
 0.9917  
 1.0000  
 1.0000  
  
P value adjustment: tukey method for comparing a family of 12 estimates   
Tests are performed on the log odds ratio scale

Site Treatment emmean SE df asymp.LCL asymp.UCL .group  
 High (-)F(-)S 1.52 0.140 Inf 1.24 1.79 1   
 High (+)F(-)S 2.39 0.181 Inf 2.03 2.74 2   
 Low (-)F(-)S 2.99 0.215 Inf 2.57 3.41 23   
 High (-)F(+)S 3.28 0.230 Inf 2.83 3.73 234   
 Medium (-)F(-)S 3.39 0.235 Inf 2.93 3.85 34   
 Medium (+)F(-)S 3.40 0.235 Inf 2.94 3.86 34   
 Low (+)F(-)S 3.50 0.240 Inf 3.03 3.98 34   
 Medium (-)F(+)S 3.52 0.241 Inf 3.05 3.99 34   
 Low (-)F(+)S 3.58 0.243 Inf 3.10 4.05 34   
 High (+)F(+)S 3.67 0.247 Inf 3.18 4.15 34   
 Medium (+)F(+)S 3.89 0.255 Inf 3.39 4.39 34   
 Low (+)F(+)S 4.07 0.261 Inf 3.55 4.58 4   
  
Results are given on the logit (not the response) scale.   
Confidence level used: 0.95   
Results are given on the log odds ratio (not the response) scale.   
P value adjustment: tukey method for comparing a family of 12 estimates   
significance level used: alpha = 0.05   
NOTE: If two or more means share the same grouping symbol,  
 then we cannot show them to be different.  
 But we also did not show them to be the same.

Site = High:  
 Treatment emmean SE df asymp.LCL asymp.UCL .group  
 (-)F(-)S 1.52 0.140 Inf 1.24 1.79 1   
 (+)F(-)S 2.39 0.181 Inf 2.03 2.74 2   
 (-)F(+)S 3.28 0.230 Inf 2.83 3.73 3   
 (+)F(+)S 3.67 0.247 Inf 3.18 4.15 3   
  
Site = Low:  
 Treatment emmean SE df asymp.LCL asymp.UCL .group  
 (-)F(-)S 2.99 0.215 Inf 2.57 3.41 1   
 (+)F(-)S 3.50 0.240 Inf 3.03 3.98 12   
 (-)F(+)S 3.58 0.243 Inf 3.10 4.05 12   
 (+)F(+)S 4.07 0.261 Inf 3.55 4.58 2   
  
Site = Medium:  
 Treatment emmean SE df asymp.LCL asymp.UCL .group  
 (-)F(-)S 3.39 0.235 Inf 2.93 3.85 1   
 (+)F(-)S 3.40 0.235 Inf 2.94 3.86 1   
 (-)F(+)S 3.52 0.241 Inf 3.05 3.99 1   
 (+)F(+)S 3.89 0.255 Inf 3.39 4.39 1   
  
Results are given on the logit (not the response) scale.   
Confidence level used: 0.95   
Results are given on the log odds ratio (not the response) scale.   
P value adjustment: tukey method for comparing a family of 4 estimates   
significance level used: alpha = 0.05   
NOTE: If two or more means share the same grouping symbol,  
 then we cannot show them to be different.  
 But we also did not show them to be the same.





