

# Annexes — Tables statistiques

## Comment lire ces tables

- **Student (t)** : choisissez un **seuil** (ex. 5%) et les **degrés de liberté** ( $ddl = N - p$ ). Comparez  $|t|$  à la **valeur critique** : si  $|t| > t\_critique$  rejet de  $H_0$ .
- **Fisher (F)** : choisissez un **seuil**, les ddl du **numérateur** ( $q = \text{nb de restrictions}$ ) et du **dénominateur** ( $N - p$ ). Si  $F > F\_critique$  rejet de  $H_0$ .

Par convention ici : **tests bilatéraux** pour Student ( $\alpha = 10\%, 5\%, 1\%$ ) et **tests unilatéraux** pour Fisher aux mêmes seuils.

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## Table de Student (bilatéral)

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## Table de Fisher (unilatéral)

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## Remarques

- Pour **Student**, si vos ddl n'apparaissent pas, prenez la valeur **la plus proche par défaut par le bas** (conservateur).
- Pour **Fisher**, si vos ddl sont hors table, utilisez directement `qf()` dans R ou élargissez la grille.

Table 1: Valeurs critiques de Student (bilatéral)

|    | ddl  | t( =10%) | t( =5%) | t( =1%) |
|----|------|----------|---------|---------|
| 1  | 1    | 6.314    | 12.706  | 63.657  |
| 2  | 2    | 2.920    | 4.303   | 9.925   |
| 3  | 3    | 2.353    | 3.182   | 5.841   |
| 4  | 4    | 2.132    | 2.776   | 4.604   |
| 5  | 5    | 2.015    | 2.571   | 4.032   |
| 6  | 6    | 1.943    | 2.447   | 3.707   |
| 7  | 7    | 1.895    | 2.365   | 3.499   |
| 8  | 8    | 1.860    | 2.306   | 3.355   |
| 9  | 9    | 1.833    | 2.262   | 3.250   |
| 10 | 10   | 1.812    | 2.228   | 3.169   |
| 11 | 11   | 1.796    | 2.201   | 3.106   |
| 12 | 12   | 1.782    | 2.179   | 3.055   |
| 13 | 13   | 1.771    | 2.160   | 3.012   |
| 14 | 14   | 1.761    | 2.145   | 2.977   |
| 15 | 15   | 1.753    | 2.131   | 2.947   |
| 16 | 16   | 1.746    | 2.120   | 2.921   |
| 17 | 17   | 1.740    | 2.110   | 2.898   |
| 18 | 18   | 1.734    | 2.101   | 2.878   |
| 19 | 19   | 1.729    | 2.093   | 2.861   |
| 20 | 20   | 1.725    | 2.086   | 2.845   |
| 21 | 21   | 1.721    | 2.080   | 2.831   |
| 22 | 22   | 1.717    | 2.074   | 2.819   |
| 23 | 23   | 1.714    | 2.069   | 2.807   |
| 24 | 24   | 1.711    | 2.064   | 2.797   |
| 25 | 25   | 1.708    | 2.060   | 2.787   |
| 26 | 26   | 1.706    | 2.056   | 2.779   |
| 27 | 27   | 1.703    | 2.052   | 2.771   |
| 28 | 28   | 1.701    | 2.048   | 2.763   |
| 29 | 29   | 1.699    | 2.045   | 2.756   |
| 30 | 30   | 1.697    | 2.042   | 2.750   |
| 31 | 40   | 1.684    | 2.021   | 2.704   |
| 32 | 50   | 1.676    | 2.009   | 2.678   |
| 33 | 60   | 1.671    | 2.000   | 2.660   |
| 34 | 70   | 1.667    | 1.994   | 2.648   |
| 35 | 80   | 1.664    | 1.990   | 2.639   |
| 36 | 90   | 1.662    | 1.987   | 2.632   |
| 37 | 100  | 1.660    | 1.984   | 2.626   |
| 38 | 110  | 1.659    | 1.982   | 2.621   |
| 39 | 120  | 1.658    | 1.980   | 2.617   |
| 40 | 150  | 1.655    | 1.976   | 2.609   |
| 41 | 200  | 1.653    | 1.972   | 2.601   |
| 42 | 500  | 1.648    | 1.965   | 2.586   |
| 43 | 1000 | 1.646    | 1.962   | 2.581   |

Table 2: Valeurs critiques de Fisher (unilatéral)

 $\$F( = 10\% )^`$ 

|   | ddl | denom. | df1=1  | df1=2  | df1=3  | df1=4 | df1=5 | df1=6 | df1=7 | df1=8 | df1=9 | df1=10 |
|---|-----|--------|--------|--------|--------|-------|-------|-------|-------|-------|-------|--------|
| 1 |     | 10     | 3.285  | 2.924  | 2.728  | 2.605 | 2.522 | 2.461 | 2.414 | 2.377 | 2.347 | 2.323  |
| 2 |     | 15     | 3.073  | 2.695  | 2.490  | 2.361 | 2.273 | 2.208 | 2.158 | 2.119 | 2.086 | 2.059  |
| 3 |     | 20     | 2.975  | 2.589  | 2.380  | 2.249 | 2.158 | 2.091 | 2.040 | 1.999 | 1.965 | 1.937  |
| 4 |     | 30     | 2.881  | 2.489  | 2.276  | 2.142 | 2.049 | 1.980 | 1.927 | 1.884 | 1.849 | 1.819  |
| 5 |     | 40     | 2.835  | 2.440  | 2.226  | 2.091 | 1.997 | 1.927 | 1.873 | 1.829 | 1.793 | 1.763  |
| 6 |     | 60     | 2.791  | 2.393  | 2.177  | 2.041 | 1.946 | 1.875 | 1.819 | 1.775 | 1.738 | 1.707  |
| 7 |     | 120    | 2.748  | 2.347  | 2.130  | 1.992 | 1.896 | 1.824 | 1.767 | 1.722 | 1.684 | 1.652  |
| 8 |     | 500    | 2.716  | 2.313  | 2.095  | 1.956 | 1.859 | 1.786 | 1.729 | 1.683 | 1.644 | 1.612  |
| 9 |     | 1000   | 2.711  | 2.308  | 2.089  | 1.950 | 1.853 | 1.780 | 1.723 | 1.676 | 1.638 | 1.605  |
|   |     |        | df1=12 | df1=15 | df1=20 |       |       |       |       |       |       |        |
| 1 |     |        | 2.284  | 2.244  | 2.201  |       |       |       |       |       |       |        |
| 2 |     |        | 2.017  | 1.972  | 1.924  |       |       |       |       |       |       |        |
| 3 |     |        | 1.892  | 1.845  | 1.794  |       |       |       |       |       |       |        |
| 4 |     |        | 1.773  | 1.722  | 1.667  |       |       |       |       |       |       |        |
| 5 |     |        | 1.715  | 1.662  | 1.605  |       |       |       |       |       |       |        |
| 6 |     |        | 1.657  | 1.603  | 1.543  |       |       |       |       |       |       |        |
| 7 |     |        | 1.601  | 1.545  | 1.482  |       |       |       |       |       |       |        |
| 8 |     |        | 1.559  | 1.501  | 1.435  |       |       |       |       |       |       |        |
| 9 |     |        | 1.552  | 1.494  | 1.428  |       |       |       |       |       |       |        |

 $\$F( = 5\% )^`$ 

|   | ddl | denom. | df1=1  | df1=2  | df1=3  | df1=4 | df1=5 | df1=6 | df1=7 | df1=8 | df1=9 | df1=10 |
|---|-----|--------|--------|--------|--------|-------|-------|-------|-------|-------|-------|--------|
| 1 |     | 10     | 4.965  | 4.103  | 3.708  | 3.478 | 3.326 | 3.217 | 3.135 | 3.072 | 3.020 | 2.978  |
| 2 |     | 15     | 4.543  | 3.682  | 3.287  | 3.056 | 2.901 | 2.790 | 2.707 | 2.641 | 2.588 | 2.544  |
| 3 |     | 20     | 4.351  | 3.493  | 3.098  | 2.866 | 2.711 | 2.599 | 2.514 | 2.447 | 2.393 | 2.348  |
| 4 |     | 30     | 4.171  | 3.316  | 2.922  | 2.690 | 2.534 | 2.421 | 2.334 | 2.266 | 2.211 | 2.165  |
| 5 |     | 40     | 4.085  | 3.232  | 2.839  | 2.606 | 2.449 | 2.336 | 2.249 | 2.180 | 2.124 | 2.077  |
| 6 |     | 60     | 4.001  | 3.150  | 2.758  | 2.525 | 2.368 | 2.254 | 2.167 | 2.097 | 2.040 | 1.993  |
| 7 |     | 120    | 3.920  | 3.072  | 2.680  | 2.447 | 2.290 | 2.175 | 2.087 | 2.016 | 1.959 | 1.910  |
| 8 |     | 500    | 3.860  | 3.014  | 2.623  | 2.390 | 2.232 | 2.117 | 2.028 | 1.957 | 1.899 | 1.850  |
| 9 |     | 1000   | 3.851  | 3.005  | 2.614  | 2.381 | 2.223 | 2.108 | 2.019 | 1.948 | 1.889 | 1.840  |
|   |     |        | df1=12 | df1=15 | df1=20 |       |       |       |       |       |       |        |
| 1 |     |        | 2.913  | 2.845  | 2.774  |       |       |       |       |       |       |        |
| 2 |     |        | 2.475  | 2.403  | 2.328  |       |       |       |       |       |       |        |
| 3 |     |        | 2.278  | 2.203  | 2.124  |       |       |       |       |       |       |        |
| 4 |     |        | 2.092  | 2.015  | 1.932  |       |       |       |       |       |       |        |
| 5 |     |        | 2.003  | 1.924  | 1.839  |       |       |       |       |       |       |        |
| 6 |     |        | 1.917  | 1.836  | 1.748  |       |       |       |       |       |       |        |
| 7 |     |        | 1.834  | 1.750  | 1.659  |       |       |       |       |       |       |        |
| 8 |     |        | 1.772  | 1.686  | 1.592  |       |       |       |       |       |       |        |
| 9 |     |        | 1.762  | 1.676  | 1.581  |       |       |       |       |       |       |        |

 $\$F( = 1\% )^`$ 

|   | ddl | denom. | df1=1  | df1=2 | df1=3 | df1=4 | df1=5 | df1=6 | df1=7 | df1=8 | df1=9 | df1=10 |
|---|-----|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| 1 |     | 10     | 10.044 | 7.559 | 6.552 | 5.994 | 5.636 | 5.386 | 5.200 | 5.057 | 4.942 | 4.849  |
| 2 |     | 15     | 8.683  | 6.359 | 5.417 | 4.893 | 4.556 | 4.318 | 4.142 | 4.004 | 3.895 | 3.805  |
| 3 |     | 20     | 8.096  | 5.849 | 4.938 | 4.431 | 4.103 | 3.871 | 3.699 | 3.564 | 3.457 | 3.368  |
| 4 |     | 30     | 7.562  | 5.390 | 4.510 | 4.018 | 3.699 | 3.473 | 3.304 | 3.173 | 3.067 | 2.979  |
| 5 |     | 40     | 7.314  | 5.179 | 4.313 | 3.828 | 3.514 | 3.291 | 3.124 | 2.993 | 2.888 | 2.801  |