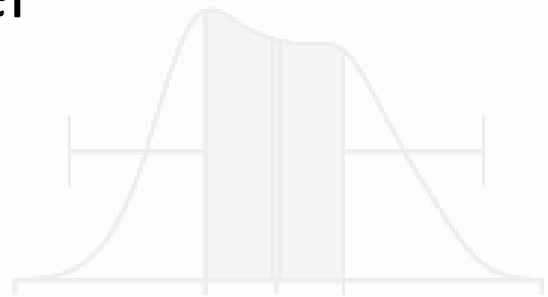
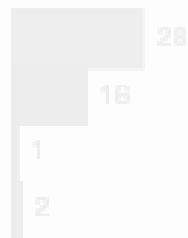
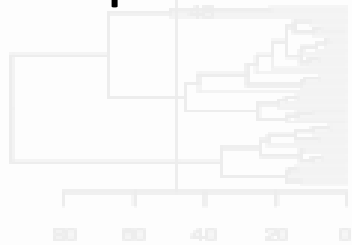


Les tests statistiques en pratique : comparaison de deux pourcentages



- Comparer deux pourcentages : le test du « Chi-2 »
- Attention aux faibles effectifs et aux petits pourcentages → test exact de Fisher

pourcentages → test exact de Fisher



```
> smp.c$ed.b <- ifelse(smp.c$ed>2,1,0)
> str(smp.c)
'data.frame': 799 obs. of 10 variables:
 $ age      : int  31 49 50 47 23 34 24 52 42 45 ...
 $ prof     : Factor w/ 8 levels "agriculteur",...: 3 NA 7 6 8 6 3 ...
 $ dep.cons : int   0 0 0 0 1 0 1 0 1 0 ...
 $ scz.cons : int   0 0 0 0 0 0 0 0 0 0 ...
 $ grav.cons: int   1 2 2 1 2 1 5 1 5 5 ...
 $ n.enfant : int   2 7 2 0 1 3 5 2 1 2 ...
 $ rs       : int   2 2 2 2 2 1 3 2 3 2 ...
 $ ed       : int   1 2 3 2 2 2 3 2 3 2 ...
 $ dr       : int   1 1 2 2 2 1 2 2 1 2 ...
 $ ed.b     : num  0 0 1 0 0 0 1 0 1 0 ...
```

```
> table(smp.c$ed.b, smp.c$dep.cons, deparse.level=2, useNA="always")
```

```
      smp.c$dep.cons
smp.c$ed.b  0    1 <NA>
0           335 135    0
1            96 126    0
<NA>        51  56    0
```

```
> table(smp.c$ed.b, smp.c$dep.cons, deparse.level=2, useNA="always")
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0           335 135    0
1           96 126    0
<NA>       51  56    0
```

```
> tab <- table(smp.c$ed.b, smp.c$dep.cons, deparse.level=2)
```

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> table(smp.c$ed.b, smp.c$dep.cons, deparse.level=2, useNA="always")
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smp.c$ed.b  0    1 <NA>
0           335 135    0
1            96 126    0
<NA>        51  56    0
```

```
> tab <- table(smp.c$ed.b, smp.c$dep.cons, deparse.level=2)
```

```
> prop.table(tab, 1)
```

```
      smp.c$dep.cons
smp.c$ed.b      0      1
0 0.7127660 0.2872340
1 0.4324324 0.5675676
```



```
> table(smp.c$ed.b, smp.c$dep.cons, deparse.level=2, useNA="always")
```

```
      smp.c$dep.cons
smp.c$ed.b  0   1 <NA>
0          335 135   0
1           96 126   0
<NA>       51  56   0
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> prop.table(tab, 1)
```

```
      smp.c$dep.cons
smp.c$ed.b      0      1
0 0.7127660 0.2872340
1 0.4324324 0.5675676
```

```
> prop.table(tab, 2)
```

```
      smp.c$dep.cons
smp.c$ed.b      0      1
0 0.7772622 0.5172414
1 0.2227378 0.4827586
```

```
> table(smp.c$ed.b, smp.c$dep.cons, deparse.level=2, useNA="always")
```

```
      smp.c$dep.cons
smp.c$ed.b  0    1 <NA>
0           335 135    0
1            96 126    0
<NA>       51  56    0
```

```
> tab <- table(smp.c$ed.b, smp.c$dep.cons, deparse.level=2)
```

```
> prop.table(tab, 1)
```

```
      smp.c$dep.cons
smp.c$ed.b      0      1
0 0.7127660 0.2872340
1 0.4324324 0.5675676
```

```
> prop.table(tab, 2)
```

```
      smp.c$dep.cons
smp.c$ed.b      0      1
0 0.7772622 0.5172414
1 0.2227378 0.4827586
```

```
> chisq.test(smp.c$ed.b, smp.c$dep.cons, correct=FALSE)
```

Pearson's Chi-squared test

data: smp.c\$ed.b and smp.c\$dep.cons

X-squared = 50.4416, df = 1, p-value = 1.228e-12

```
> chisq.test(smp.c$ed.b, smp.c$dep.cons, correct=FALSE)
```

Pearson's Chi-squared test

data: smp.c\$ed.b and smp.c\$dep.cons

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> chisq.test(smp.c$ed.b, smp.c$dep.cons, correct=FALSE)
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Pearson's Chi-squared test

data: smp.c\$ed.b and smp.c\$dep.cons

X-squared = 50.4416, df = 1, p-value = 1.228e-12

Comparaison de deux pourcentages : le test de Fisher

Introduction à la statistique avec R > Comparaison de 2 pourcentages



Message d'avis :
In `chisq.test(x)` : l'approximation du Chi-2 est peut-être incorrecte


```
> fisher.test(smp.c$ed.b, smp.c$dep.cons)
```

```
Fisher's Exact Test for Count Data
```

```
data: smp.c$ed.b and smp.c$dep.cons
```

```
p-value = 2.033e-12
```

```
alternative hypothesis: true odds ratio is not equal to 1
```

```
95 percent confidence interval:
```

```
2.303664 4.603460
```

```
sample estimates:
```

```
odds ratio
```

```
3.250819
```

```
smp.c$ed.b <- ifelse(smp.c$ed>2,1,0)
str(smp.c)
table(smp.c$ed.b,smp.c$dep.cons,deparse.level=2,useNA="always")
tab <- table(smp.c$ed.b,smp.c$dep.cons,deparse.level=2)
prop.table(tab,1)
prop.table(tab,2)
chisq.test(smp.c$ed.b,smp.c$dep.cons,correct=FALSE)
fisher.test(smp.c$ed.b,smp.c$dep.cons)
```