



# The Psych Package

# Functions

>describeBy (or  
>describe.by)

>pairs.panels

>bestScales



## Working with Multiple Packages

`psych::function_name()`

>describeBy  
>describe.by

- Much more compact than  
>by() command on similar  
summary tools
  - CHECK = TRUE: Converts  
categorical & logical  
variables to numeric  
variables (\*)
  - IQR = TRUE: Show IQR

```
> describeBy(sat.act[4:6], sat.act$gender)
```

## Descriptive statistics by group

group: 1

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis
ACT	1	247	28.79	5.06	30	29.23	4.45	3	36	33	-1.06	1.89
SATV	2	247	615.11	114.16	630	622.07	118.61	200	800	600	-0.63	0.13
SATQ	3	245	635.87	116.02	660	645.53	94.89	300	800	500	-0.72	-0.12

se

ACT 0.32

SATV 7.26  
SATO 7.41

group: 2

	vars	n	mean	sd	median	trimmed	mad	min	max	range	skew	kurtosis
ACT	1	453	28.42	4.69	29	28.63	4.45	15	36	21	-0.39	-0.42
SATV	2	453	610.66	112.31	620	617.91	103.78	200	800	600	-0.65	0.42
SATQ	3	442	596.00	113.07	600	602.21	133.43	200	800	600	-0.58	0.13

se

ACT 0-22

SATV 5-28

SATO 5.38

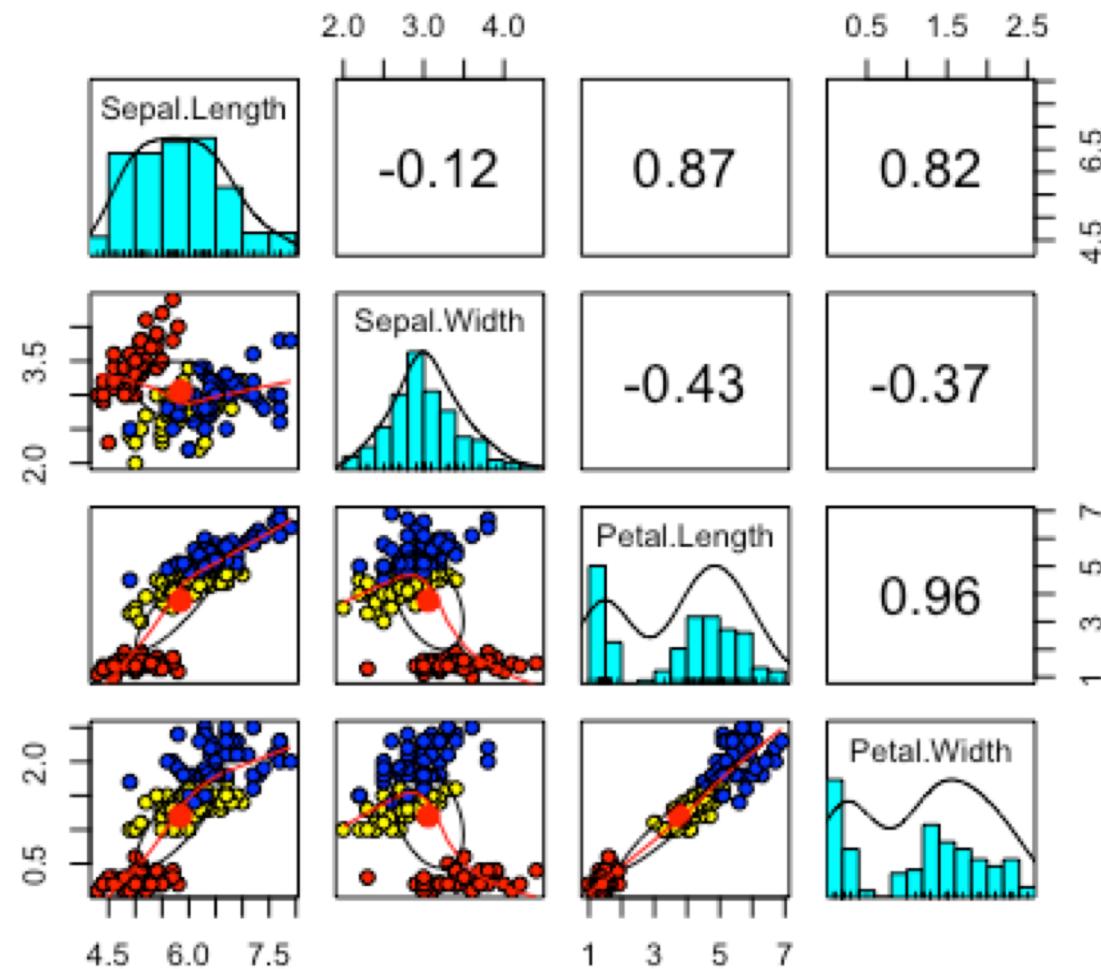


>pairs.panels

➤ pairs.panels(iris[1:4],bg=c("red","yellow","blue"))[iris\$Species],  
pch=21,main="Fisher Iris data by Species")

By color

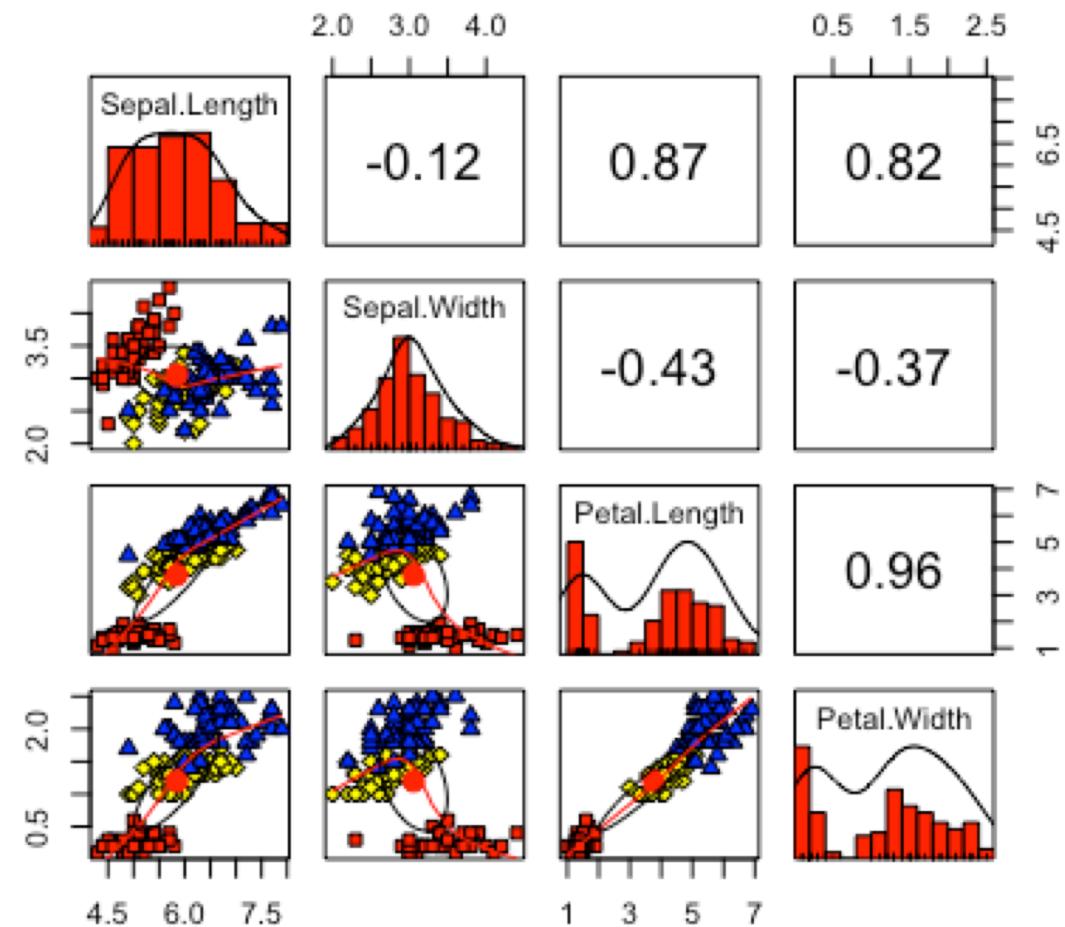
## Fisher Iris data by Species





```
>pairs.panels(iris[1:4],bg=c("red","yellow","blue")
)[iris$Species],pch=21+as.numeric(iris$Species),
main="Fisher Iris data by Species",hist.col="red")
```

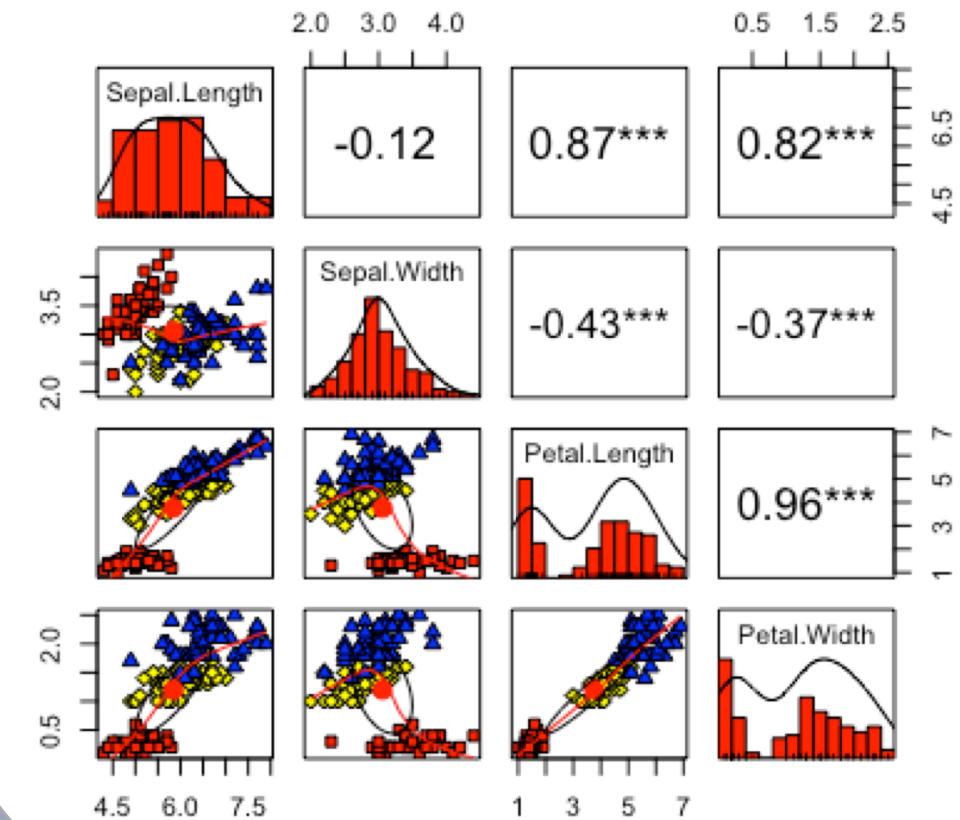
## Fisher Iris data by Species



# With significance

```
>pairs.panels(iris[1:4],bg=c("red","yellow","blue")[iris$Species],  
pch=21+as.numeric(iris$Species),main="Fisher Iris data by  
Species",hist.col="red",stars=TRUE)
```

Fisher Iris data by Species



>bestScales



Bagging: A bootstrap aggregation function for choosing the most predictive functions



Forms scales from the items most correlated with a particular criterion



Sorts by criteria correlations and displays the item content



Capitalizes on chance—be careful of overinterpreting results unless using large sample size

```
> bestboot <- bestScales(bfi, criteria=cs(gender, age, education), n.iter=10, dictionary=bfi.dictionary[1:3])
> bestboot
```

```
Call = bestScales(x = bfi, criteria = cs(gender, age, education), dictionary = bfi.dictionary[1:3],
n.iter = 10)
      derivation.mean derivation.sd validation.m validation.sd final.valid
gender           0.31        0.020       0.31       0.027       0.30
age              0.25        0.012       0.23       0.020       0.24
education        0.16        0.024       0.14       0.020       0.14
```

Best items on each scale with counts of replications

\$gender

	Freq	Freq.1	mean.r	sd.r	ItemLabel	Item	Giant3
N5	10	10	0.21	0.02	q_1505	Panic easily.	Stability
A2	10	10	0.18	0.02	q_1162	Inquire about others' well-being.	Cohesion
A1	10	10	-0.15	0.01	q_146	Am indifferent to the feelings of others.	Cohesion
A3	10	10	0.14	0.02	q_1206	Know how to comfort others.	Cohesion
N3	10	10	0.12	0.01	q_1099	Have frequent mood swings.	Stability
A4	9	10	0.12	0.02	q_1364	Love children.	Cohesion

\$age

	Freq	Freq.1	mean.r	sd.r	ItemLabel	Item	Giant3
A1	10	10	-0.15	0.02	q_146	Am indifferent to the feelings of others.	Cohesion
C4	10	10	-0.15	0.02	q_626	Do things in a half-way manner.	Stability
A4	10	10	0.15	0.02	q_1364	Love children.	Cohesion
A5	10	10	0.13	0.02	q_1419	Make people feel at ease.	Cohesion
E5	10	10	0.12	0.01	q_1768	Take charge.	Plasticity
N3	9	10	-0.12	0.02	q_1099	Have frequent mood swings.	Stability
E2	9	10	-0.12	0.01	q_901	Find it difficult to approach others.	Plasticity

\$education

	Freq	Freq.1	mean.r	sd.r	ItemLabel	Item	Giant3
A1	10	10	-0.14	0.02	q_146	Am indifferent to the feelings of others.	Cohesion



# The Psych Package