Partial , Biserial and Point Biserial Correlation

Code

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```
# writingfunctions in R
# to get mean

meanOfVariable <- function(variables){
  mean <-sum(variables)/length(variables)
  cat("Mean: ", mean)
}
```

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```
meanOfVariable(c(1,2,3,4))
```

```
Mean:  2.5
```

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```
data<-read.csv('/home/atrides/Desktop/R/statistics_with_R/06/Data_Files/pbcorr.csv', header=TRUE)

head(data)
```

	time <int>	gender <int>	recode <int>
1	41	1	0
2	40	0	1
3	40	1	0
4	38	1	0
5	34	1	0
6	46	0	1

6 rows

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```
# point-biserial correaltion
cor.test(data$time, data$gender, method = 'pearson')
```

```
    Pearson's product-moment correlation

data:  data$time and data$gender
t = 3.1138, df = 58, p-value = 0.002868
alternative hypothesis: true correlation is not equal to 0
95 percent confidence interval:
 0.137769 0.576936
sample estimates:
      cor
0.3784542
```

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```
# biserial correlation
catFrequencies<-table(data$gender)
proportions(catFrequencies)
```

```
        0         1
0.5333333 0.4666667
```

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```
r_pb = (0.378*sqrt(0.533*0.467))/.3977
r_pb
```

```
[1] 0.4741964
```

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```
# or use function
polyserial(data$time, data$gender)
```

```
[1] 0.4749256
```

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```
# Partial Correlation , using ggm package
data<-read.delim('/home/atrides/Desktop/R/statistics_with_R/06/Data_Files/Ex
am Anxiety.dat',header=TRUE)
data<-data[, c('Exam', 'Anxiety', 'Revise')]

pc<-pcor(c('Exam', 'Anxiety' , 'Revise'), var(data))  # first two variable p
assed inside c are the req variables and all other
# variables in c() are control variables
```

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```
print(pc)
```

```
[1] -0.2466658
```

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```
print(pc^2)
```

```
[1] 0.06084403
```

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```
# pcor siginificance
pcor.test(pc, 1, 103)  # (pcor.object, no.of control variables, sample size)
```

```
$tval
[1] -2.545307

$df
[1] 100

$pvalue
[1] 0.01244581
```