

```

1 # Create a matrix for the data
2 data = matrix(c(18, 2, 20, 22, 28, 10, 20, 40, 40, 10, 20, 22, 28, 10, 20, 40, 40, 10), nrow = 3, byrow = TRUE)
3 rownames(data) <- c("5-6 years", "7-8 years", "9-10 years")
4 colnames(data) <- c("A", "B", "C")
5
6 # Calculate covariance matrix for the preferences
7 cov_bc <- cov(data[, "B"], data[, "C"])
8 print(paste("Covariance between B and C:", cov_bc))
9
10 # Calculate sample covariance matrix for the preferences
11 cov_matrix <- cov(data)
12 print("Sample Covariance Matrix:")
13 print(cov_matrix)
14
15 # Calculate correlation matrix for the preferences
16 cor_bc <- cor(data[, "B"], data[, "C"])
17 print(paste("Correlation between B and C:", cor_bc))
18
19 # Calculate sample correlation matrix for the preferences
20 cor_matrix <- cor(data)
21 print("Sample Correlation Matrix:")

```

```

R 4.2.3 -- /
> print(cov_matrix)
      A      B      C
A  4  26.0000  10.0000
B  26 122.0000 141.0000
C  10 141 333.0000 333.0000
>
> # Calculate correlation between B and C
> cor_bc <- cor(data[, "B"], data[, "C"])
> print(paste("Correlation between B and C:", cor_bc))
[1] "Correlation between B and C: 0.483054600011872"
>
> # Calculate sample correlation matrix for the preferences
> # Calculate sample correlation matrix for the preferences
> cor_matrix <- cor(data)
> print("Sample Correlation Matrix:")
[1] "Sample Correlation Matrix:"
> print(cor_matrix)
      A      B      C
A  1.0000000 0.6692383 0.3273268
B  0.6692383 1.0000000 0.4830546
C  0.3273268 0.4830546 1.0000000

```

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Global Environment

Object	Class	Attributes
Data	matrix	dim: 3 17
cov_matrix	num [1:3, 1:3]	4 26 10 26 122 141 10 141 333
Values	num [1:3, 1:3]	18 2 20 22 28 10 20 40 40 10 20 22 28 10 20 40 40 10
Time-Series	Time-Series [1:144]	from 1040 to 1061: 112 118 132 120 12...
cov_bc	num [1:1]	0.483054600011872
cor_bc	num [1:1]	0.483054600011872
min_max_normalized	num [1:3]	0 0.125 0.237 0.316 1.581
z_score_normalized	num [1:3]	-0.949 -0.632 -0.316 0.316 1.581

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