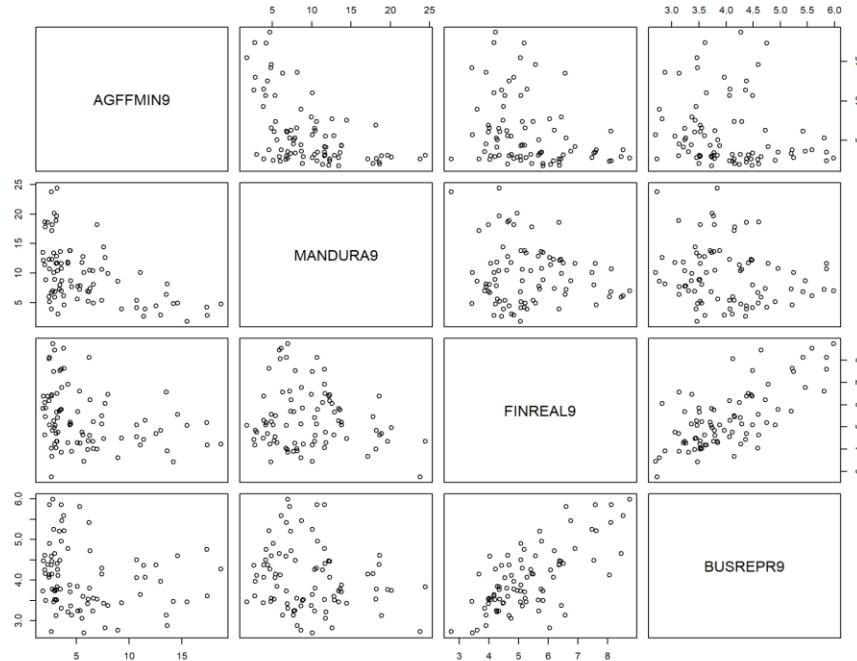


Assignment 1

1. Scatterplot Matrix



2.

Pearson Correlation Matrix

	AGFFMIN9	MANDURA9	FINREAL9	BUSREPR9
AGFFMIN9	1.00	-0.52	-0.29	-0.18
MANDURA9	-0.52	1.00	-0.14	-0.19
FINREAL9	-0.29	-0.14	1.00	0.70
BUSREPR9	-0.18	-0.19	0.70	1.00

& p-values

	AGFFMIN9	MANDURA9	FINREAL9	BUSREPR9
AGFFMIN9	0.00	0.00	0.03	0.25
MANDURA9	0.00	0.00	0.25	0.25
FINREAL9	0.01	0.19	0.00	0.00
BUSREPR9	0.10	0.08	0.00	0.00

3. Interpret the three relationships

AGFFMIN9 & MANDURA9

- Correlation: -0.52
- Meaning: moderate negative relationship
- When AGFFMIN9 goes up, MANDURA9 usually goes down. They move in opposite directions.

MANDURA9 & FINREAL9

- Correlation: -0.14
- Meaning: very weak relationship
- The numbers barely move together. The relationship is so small that it almost doesn't matter.

FINREAL9 & BUSREPR9

- Correlation: 0.70
- Meaning: strong positive relationship
- When FINREAL9 goes up, BUSREPR9 also goes up. These two move together very strongly.

4. Significance at $\alpha = 0.01$

AGFFMIN9 & MANDURA9

- p-value: 0.00
- significant. The relationship is real.

MANDURA9 & FINREAL9

- p-value: 0.25
- not significant. This weak relationship is probably just random.

FINREAL9 & BUSREPR9

- p-value: 0.00
- significant. Their strong positive relationship is real.

5. Weakest and strongest linear relationships

Strongest: FINREAL9 & BUSREPR9 ($r = 0.70$)

Weakest: MANDURA9 & FINREAL9 ($r = -0.14$)

Assignment 2

1. Spearman Correlation Matrix

	AGFFMIN9	MANDURA9	FINREAL9	BUSREPR9
AGFFMIN9	1.00	-0.51	-0.31	-0.26
MANDURA9	-0.51	1.00	-0.02	-0.18
FINREAL9	-0.31	-0.02	1.00	0.62
BUSREPR9	-0.26	-0.18	0.62	1.00

p-values

	AGFFMIN9	MANDURA9	FINREAL9	BUSREPR9
AGFFMIN9	0.00	0.00	0.01	0.05
MANDURA9	0.00	0.00	0.85	0.21
FINREAL9	0.00	0.85	0.00	0.00
BUSREPR9	0.02	0.11	0.00	0.00

2. Strongest & weakest monotonic relationships + decisions

Strongest monotonic relationship: FINREAL9 & BUSREPR9 ($\rho = 0.62$) $p = 0.00$ significant

Weakest monotonic relationship: MANDURA9 & FINREAL9 ($\rho = -0.02$) $p = 0.85$ not significant

3. Compare Pearson vs Spearman

Both Pearson and Spearman show:

- AGFFMIN9 & MANDURA9 = moderate negative
- FINREAL9 & BUSREPR9 = strongest positive relationship
- Pearson shows MANDURA9 & FINREAL9 as a tiny negative linear relationship (-0.14)
- Spearman shows it as basically no relationship (-0.02)
- This means the ranked/monotonic pattern is even weaker than the linear pattern.

