Case Breakdown

"The plaintiffs had presented a set of data to show that female faculty at the school were **less likely to be full professors**, **more likely to be assistant professors**, and **earn less money than men**, **on average.** "
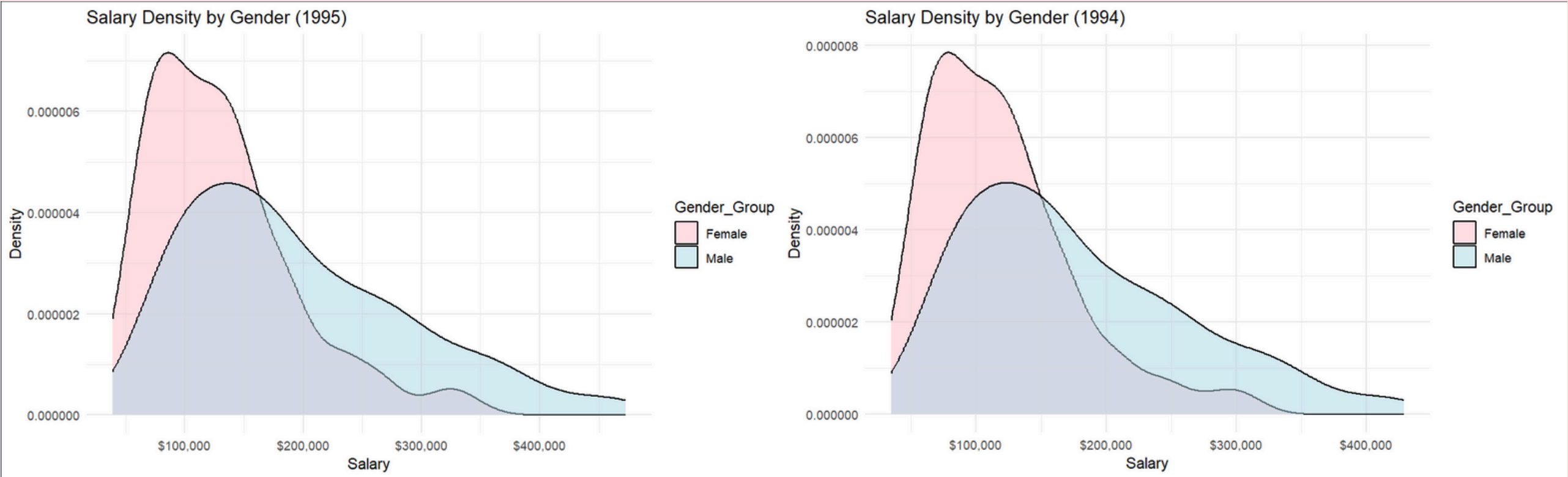
1

RANK

2

SALARY

Does Gender Affect Salary Directly?

SALARY

Mean & Median Salaries

	gen_name	mean_Sal94	median_Sal94	mean_Sal95	median_Sal95
	\<char\>	\<num\>	\<num\>	\<num\>	\<num\>
1:	Male	177338.8	155006	194914.1	170967
2:	Female	118871.3	108457	130876.9	119135

Distribution

Spread of Female and Male Salaries

Salary Density by Gender (1995)

Salary Density by Gender (1994)

Females earn less than males on average

SALARY

Does Other Factors Affect Salary?

Linear Regression

Sal94 = 285727 + 11727 GenderMale + 20646 CertCertified – 36485 ClinClinical + 4739 Exper – 36511 Prate

Sal95 = 314494 + 12439 GenderMale + 22457 CertCertified – 39499 ClinClinical + 5235 Exper – 40243 Prate

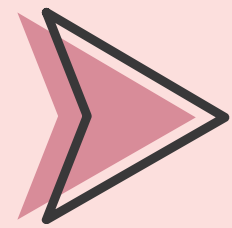❌ P-value for Gender = 0.063 & 0.073 respectively

Determining Accuracy
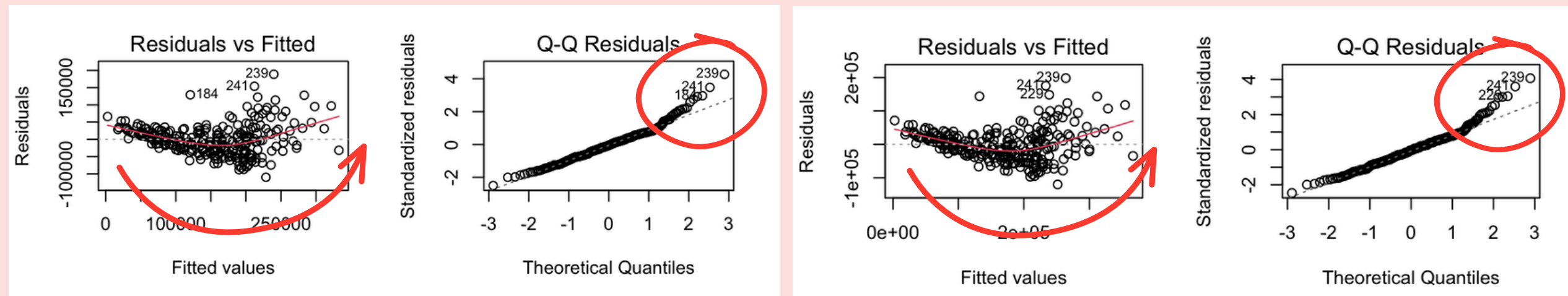
1) **Non-linearity**
2) **Heavy/right tail + Outliers**
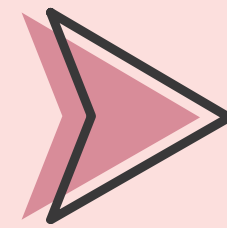**→ affects p-values/ CI if not handled**

Model may not be accurate !

Conclusion

RANK

SALARY

> **Females have <u>LESSER</u> experience than required to be promoted**

> **Females earn between $3.6k to $7.5k <u>LESS</u> increment than males**

> **More male <u>FULL</u> professors, <u>2.67 times</u> more likely to hold a higher rank than females**
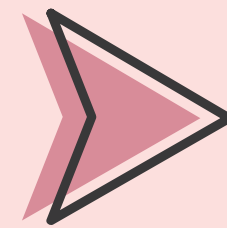
> **Males earn <u>MORE</u> with <u>SIMILAR</u> experience levels**
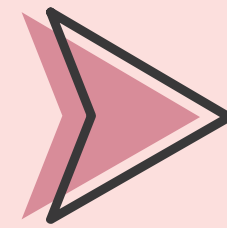
> **Pay gap <u>EXISTS</u> between males and females of the same rank**