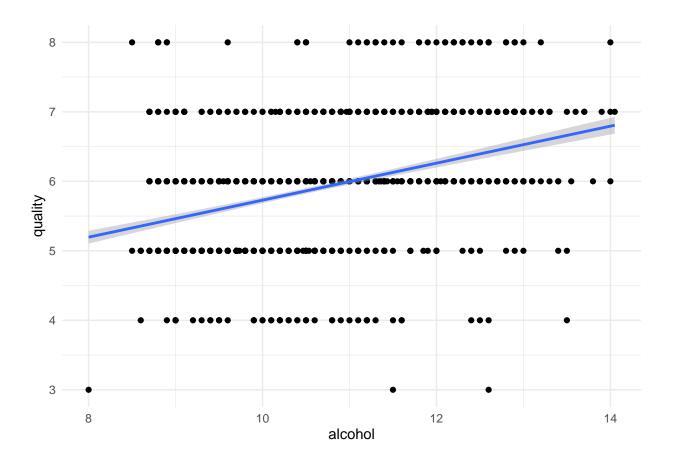
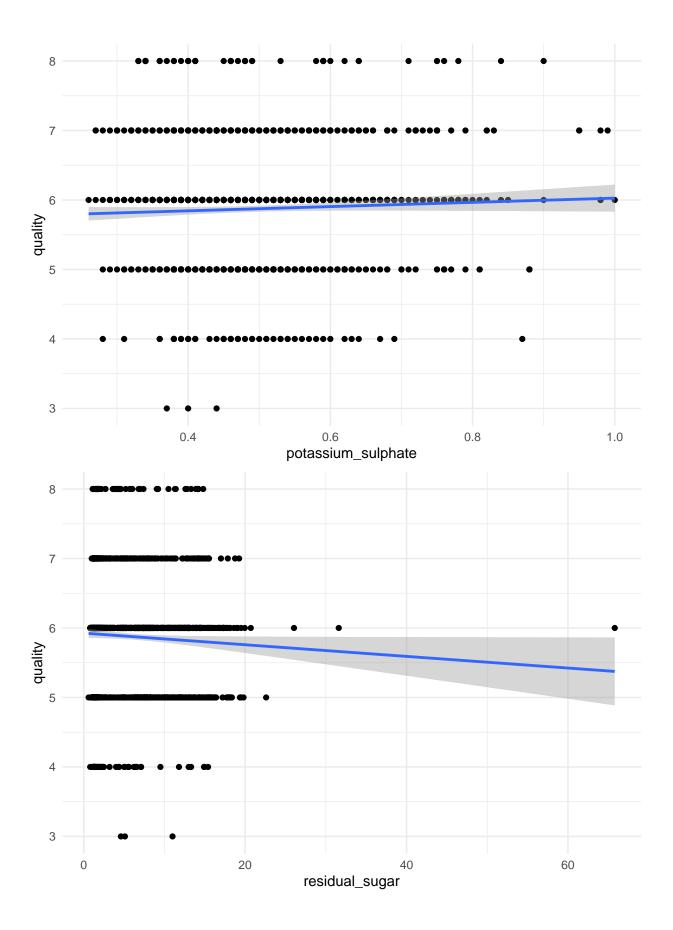
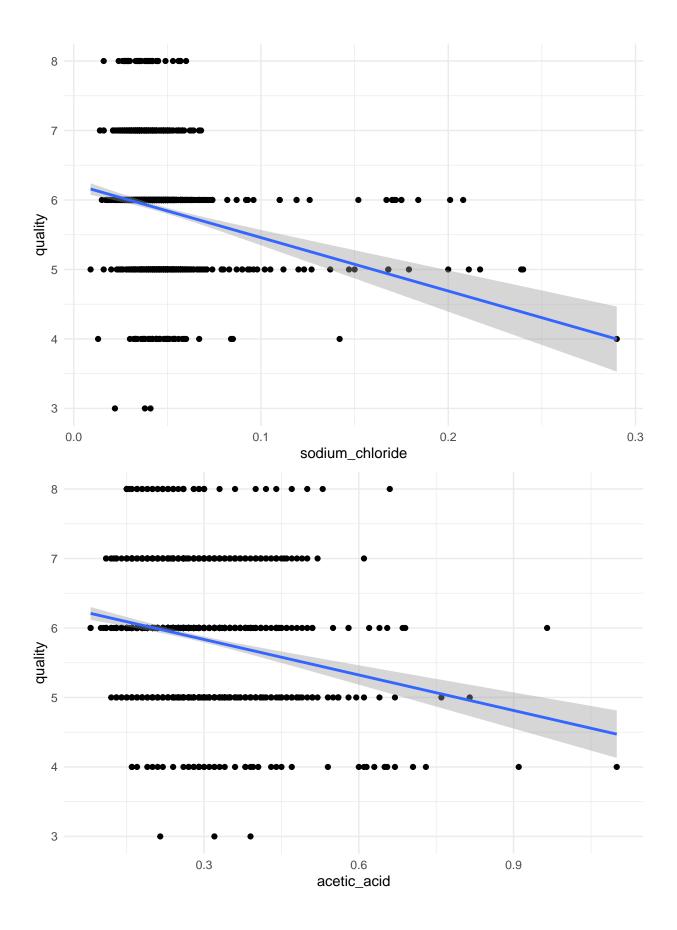
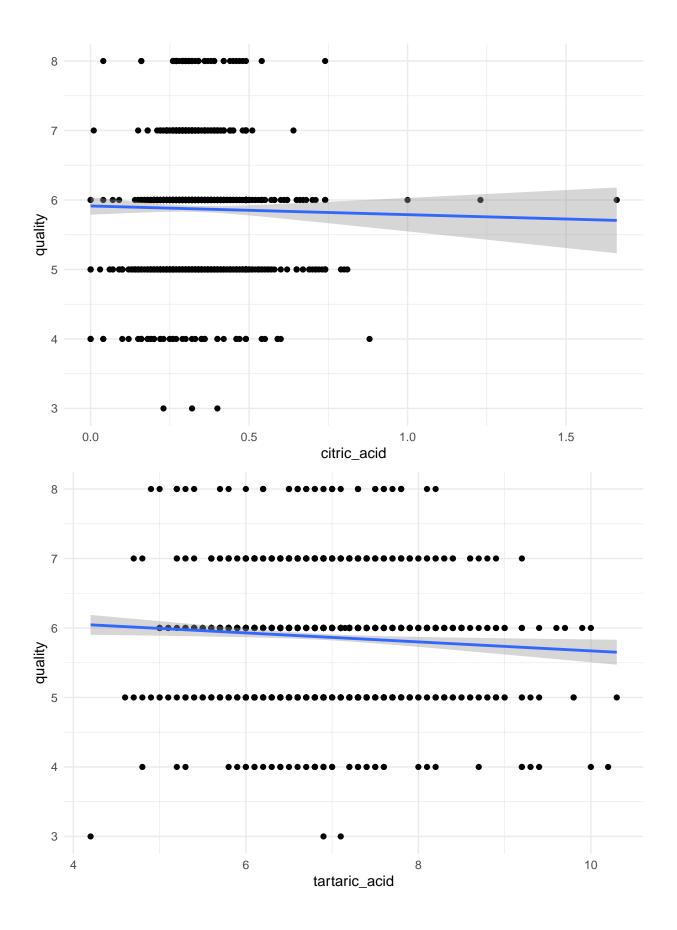
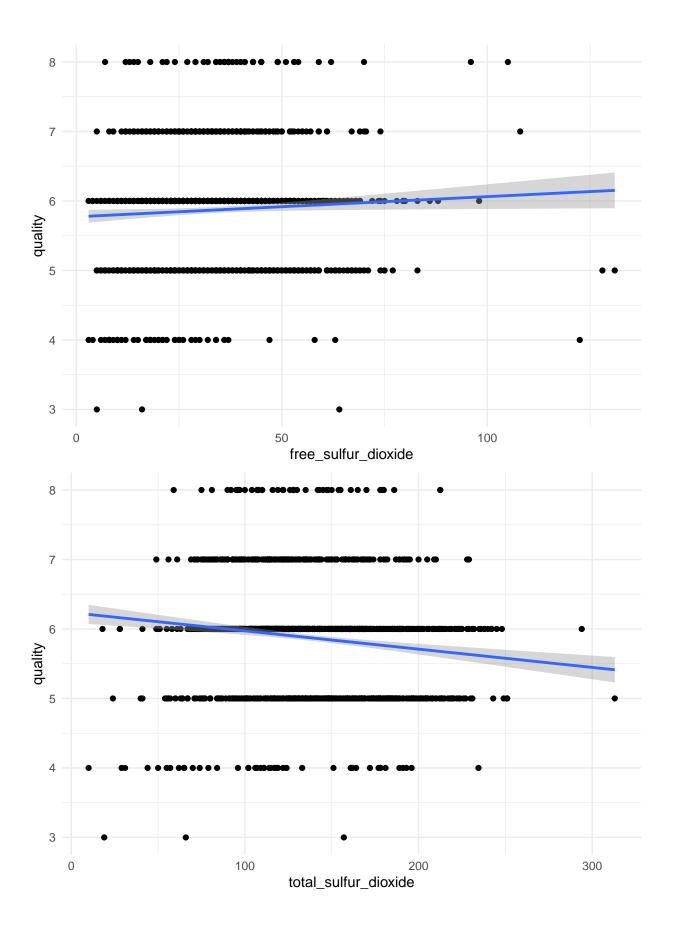
Initial Exploration, Modeling, and Visualizations

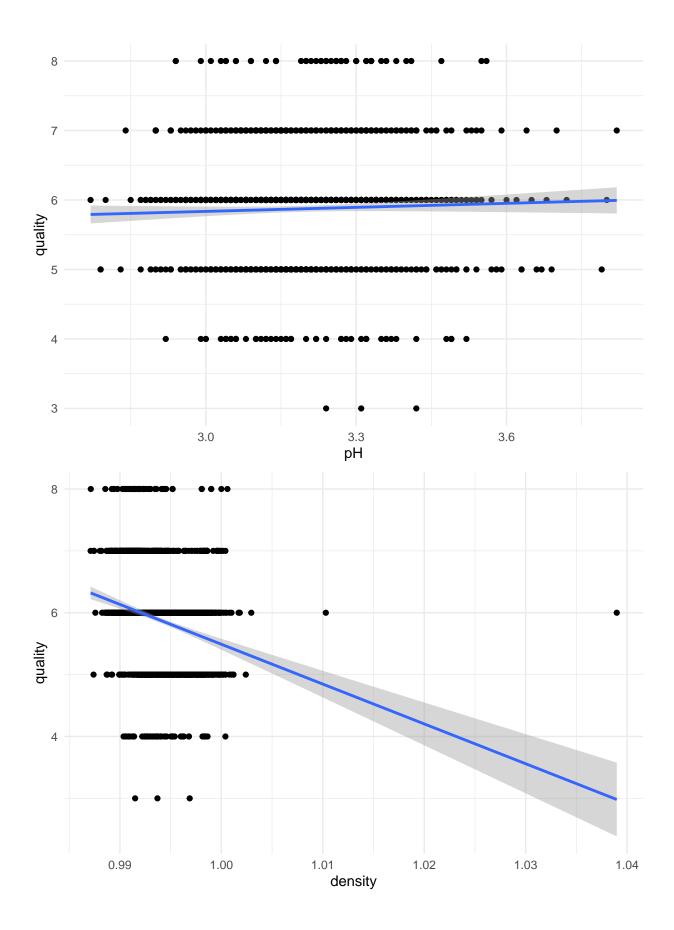












regression with potassium sulphate as primary ${\bf X}$ variable

Table 1: Estimated Regressions

	Output Variable: Wine Quality Score				
	(1)	(2)	(3)	(4)	
potassium_sulphate	$0.30 \\ (0.20)$	0.49** (0.17)	0.64*** (0.18)	0.46** (0.17)	
alcohol		0.33*** (0.02)	0.25*** (0.04)	0.34*** (0.02)	
sodium_chloride		-1.14 (0.80)	-0.93 (0.82)	-1.19 (0.80)	
acetic_acid		-2.19^{***} (0.21)	-2.12^{***} (0.20)	-2.21^{***} (0.21)	
citric_acid		-0.25 (0.16)	-0.25 (0.16)	-0.28 (0.16)	
tartaric_acid		-0.03 (0.02)	0.02 (0.03)	-0.03 (0.02)	
residual_sugar		0.03*** (0.004)	0.06*** (0.01)	0.03*** (0.004)	
total_sulfur_dioxide			0.001* (0.001)	0.001 (0.001)	
density			-81.26^{**} (29.59)		
Constant	5.72*** (0.10)	2.90*** (0.31)	83.73** (29.54)	2.70*** (0.32)	
Observations \mathbb{R}^2 Residual Std. Error	1,470 0.002 0.85 (df = 1468)	1,470 0.24 0.74 (df = 1462)	1,470 0.25 0.74 (df = 1460)	$ \begin{array}{c} 1,470 \\ 0.24 \\ 0.74 \text{ (df} = 1461) \end{array} $	

Note:

 HC_1 robust standard errors in parentheses.

regression with sodium_chloride as primary X variable regression with acetic_acid as primary X variable Equation for linear regression:

$$\widehat{quality} = \beta_0 + \beta_1 \cdot (insert\ variable) + \mathbf{Z}\gamma$$

Table 2: Estimated Regressions

	Table 2. Estimated Regressions						
	Output Variable: Wine Quality Score						
	(1)	(2)	(3)	(4)			
sodium_chloride	-7.68*** (0.02)	-1.14 (0.00)	-0.93	-1.19			
	(0.92)	(0.80)	(0.82)	(0.80)			
acetic_acid		-2.19***	-2.12***	-2.21^{***}			
		(0.21)	(0.20)	(0.21)			
potassium_sulphate		0.49**	0.64^{***}	0.46**			
		(0.17)	(0.18)	(0.17)			
alcohol		0.33***	0.25***	0.34***			
		(0.02)	(0.04)	(0.02)			
citric_acid		-0.25	-0.25	-0.28			
		(0.16)	(0.16)	(0.16)			
tartaric_acid		-0.03	0.02	-0.03			
		(0.02)	(0.03)	(0.02)			
${\rm residual_sugar}$		0.03***	0.06***	0.03***			
		(0.004)	(0.01)	(0.004)			
total_sulfur_dioxide			0.001*	0.001			
			(0.001)	(0.001)			
density			-81.26**				
			(29.59)				
Constant	6.23***	2.90***	83.73**	2.70***			
	(0.05)	(0.31)	(29.54)	(0.32)			
Observations	1,470	1,470	1,470	1,470			
\mathbb{R}^2	0.04	0.24	0.25	0.24			
Residual Std. Error	0.83 (df = 1468)	0.74 (df = 1462)	0.74 (df = 1460)	0.74 (df = 1461)			

Note:

 HC_1 robust standard errors in parentheses.

Table 3: Estimated Regressions

	Table 6. Estimated Regressions							
	Output Variable: Wine Quality Score							
	(1)	(2)	(3)	(4)				
Acetic acid (g/dm^3)	-1.70^{***} (0.23)	-2.19*** (0.21)	-2.12^{***} (0.20)	-2.21*** (0.21)				
Sodium chloride (g/dm^3)		-1.14 (0.80)	-0.93 (0.82)	-1.19 (0.80)				
Potassium sulphate (g/dm^3)		0.49** (0.17)	0.64*** (0.18)	0.46** (0.17)				
Alcohol $(vol.\%)$		0.33*** (0.02)	0.25*** (0.04)	0.34*** (0.02)				
Citric acid (g/dm^3)		-0.25 (0.16)	-0.25 (0.16)	-0.28 (0.16)				
Tartaric acid (g/dm^3)		-0.03 (0.02)	0.02 (0.03)	-0.03 (0.02)				
Residual sugar (g/dm^3)		0.03*** (0.004)	0.06*** (0.01)	0.03*** (0.004)				
Total sulfur dioxide (mg/dm^3)			0.001* (0.001)	0.001 (0.001)				
Density (g/cm^3)			-81.26^{**} (29.59)					
Constant	6.35*** (0.06)	2.90*** (0.31)	83.73** (29.54)	2.70*** (0.32)				
Observations R ²	1,470 0.04	1,470 0.24	1,470 0.25	1,470 0.24				
Residual Std. Error	0.83 (df = 1468)	0.74 (df = 1462)	0.74 (df = 1460)	0.74 (df = 1461)				

Note:

 HC_1 robust standard errors in parentheses.